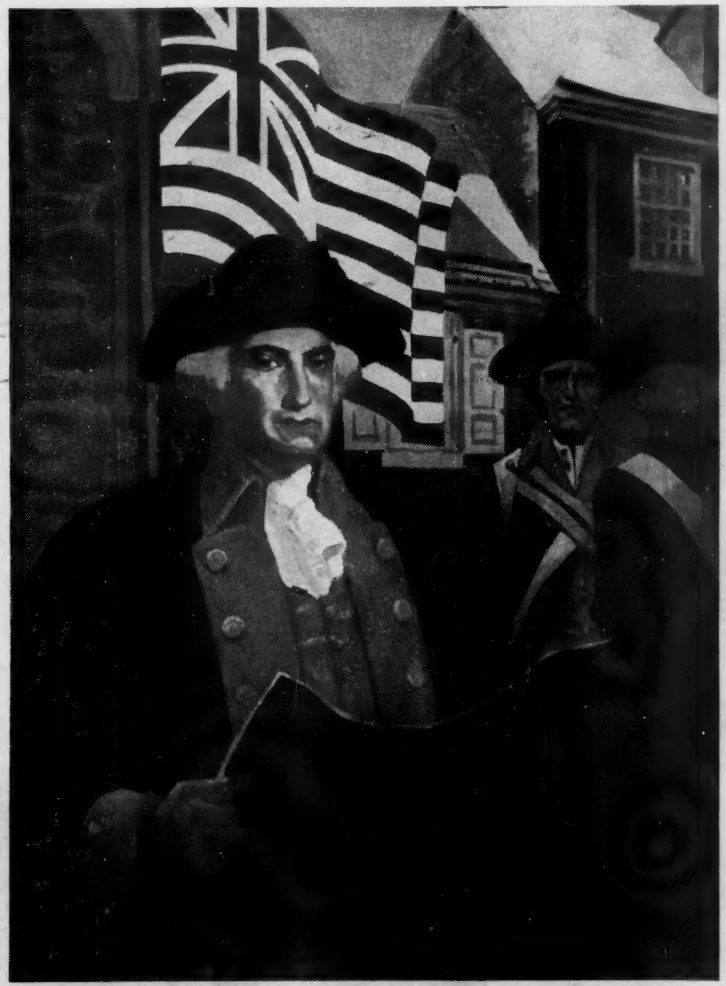
The CAVALRY JOURNAL



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THE CAVALRY JOURNAL

VOL. XLI JANUARY-FEBRUARY, 1932 No. 169

The Air-Cooled Machine Gun

By Captain Thomas J. Heavey, 2nd Cavalry

NOTE: All rifle troops will shortly be equipped with the .30-caliber air-cooled machine gun. Due to lack of funds this gun will be issued with its original mount. With this mount its accuracy is not comparable with its accuracy when mounted on the experimental mount referred to in this article. This experimental mount, or modification thereof, will be furnished as soon as funds become available. Until such funds are available all shooting for qualification by men assigned as light machine-gunners will be done with the rifle and not with the .30-caliber air-cooled machine gun. Firing with the latter gun will be for instructional and combat purposes only.

THE adoption by the Cavalry of the Browning air-cooled tank machine gun (cal. .30, M1919, E-1) to replace the machine rifle has called forth many comments from the using branch, and others. As is usual with the advent of something new, differing radically from the old established traditions, discussions as to the advisability of the change are current. The much maligned machine rifle now appears to have a host of friends, all of whom are not "retiring" in sounding its praise. It is but fair to remark that such eulogy is human nature. None of us ever realize what fine citizens, heroes and pillars of the state we are until we are well away to the eventual dissolution under the sod.

However, the purpose of this article is not to engage in acrimonious debate. It is to acquaint the using service with what we can do and, if we are willing to try, what will be done with the "new" weapon. So, the attempt will be made to stick to facts and not be fanciful.

The air-cooled machine gun, as at present issued, is mounted on a small tripod weighing about five pounds. This tripod was originally intended for emergency use in case the tank mounting the gun was disabled and the crew forced to get out and continue the fight. In such a situation short range fire dispersed over a wide area is satisfactory, and the tripod is well suited to such use, as it is light, quickly set up and portable. However, for its purpose, the Cavalry requires the light machine gun to be so mounted that it can deliver accurate long range fire at a high rate of fire. It is a well established fact that no machine gun is one whit more accurate than the mount with which it is used. We could hardly expect the most accurate National Match rifle to ring up high expert scores when Pvt. John Doe, age 17, weight one hundred and ten, military experience three weeks, natural ability to shoot nil, handles it. Our past experience with an automatic weapon taught us that it was an impossible task to get the type shooting we wanted without a bipod and butt rest, a mechanical controlling device. And we do not as a rule send Pvt. John Doe to shoot on our rifle teams. Hence the development and design of a tripod to team up with the mechanically excellent machine gun, for a square and fair break for the gun.

The results obtained, so far, indicate that our old friend, the machine rifle, was indeed a fine old friend—but had come to the end of his usefulness. The tripod that seems to answer our needs is based on the already proven maxim, that an automatic weapon must have some *mechanical* method to control elevation, in order to be the most effective weapon. As the "issue" or "tank" tripod has one leg in rear and two to the front, it would be quite difficult to equip it with an elevating device. It was, therefore, decided to make the mount with two legs to the rear and to attach the elevating gear to a horizontal bar joining these two legs. To secure stability without undue weight, the tripod was so designed as to place the gun close to the ground.

The first tripod of this type, roughly designed, was tested by the 2nd Cavalry at Fort Riley in September during the musketry phase of the regimental training. The primary purpose of the test was to get a comparison between our old friend, the machine rifle, and the new air-cooled machine gun and try to find out what we had gained or lost by our "swap." To

Firing Position Used with the Air-cooled Machine Gun on Experimental Mount.

this end it was decided to select an experienced machine rifleman (Sergeant Williamson, Troop "B", 2nd Cavalry) and have him fire each weapon in eleven musketry problems, the machine gun to be fired first and then the machine rifle. The same amount of time was allowed for actual firing.

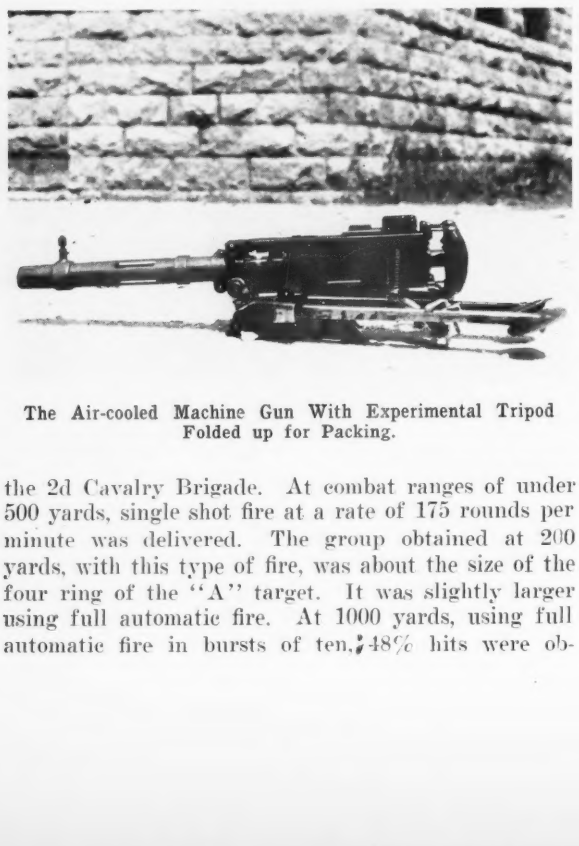
This firing was conducted against silhouettes, many of them camouflaged or completely hidden, at un-

known ranges varying from 300 to 650 yards. The problems called for different types of fire,—surprise, fixed, traversing, searching, oblique traverse—and frequent changes of fire from one target to another. The last three exercises involved fire on moving targets, representing dismounted men, mounted men and armored cars, moving at varying rates of speed up to 25 miles per hour and at ranges of from 300 to 450 yards.

The whole result may be boiled down to the following empirical statement: the machine gun, *in a unit of time*, fired 2.3 as many rounds as the machine rifle and obtained 2.4 times as many hits. No conclusive opinions can reasonably be formed from this limited amount of firing. But the results are striking, especially when it is considered that the gunner was an expert with the machine rifle and had never fired the air-cooled machine gun prior to the start of the test.

Shortly following this test firing a demonstration was given in the presence of The Chief of Cavalry, at Fort Riley, and following results obtained. At a range of 150 yards, 185 rounds were fired, single shot, on the "A" target. Two of these shots were out of the four ring, and they were not very far out. At the same range, 75 rounds, full automatic fire, were fired in 15 seconds. Two of these shots were out of the four ring, and again not far out. Out of a clear sky, fire was ordered on this same target at 1000 yards, and the gunner obtained approximately 50 hits on the "A" target in 200 rounds fired.

Recently firing on this type tripod has been demonstrated at Fort Bliss, to officers and enlisted men of



The Air-cooled Machine Gun With Experimental Tripod Folded up for Packing.

the 2d Cavalry Brigade. At combat ranges of under 500 yards, single shot fire at a rate of 175 rounds per minute was delivered. The group obtained at 200 yards, with this type of fire, was about the size of the four ring of the "A" target. It was slightly larger using full automatic fire. At 1000 yards, using full automatic fire in bursts of ten, 48% hits were obtained on the "B" target. At 1500 yards, which by the way is *quite* a long way off, about 15% hits were obtained, using full automatic fire, bursts of 15. Using the elevating and traversing gear to lay the gun by indirect fire methods, 100% hits were obtained at a range of about 300 yards on a six foot by six foot screen. "Scientific" firing at 125 yards showed that

The Air-cooled Machine Gun Mounted on Experimental Tripod.

the "mean radius of dispersion" of the E-1 gun on the pilot tripod, using "single shot" fire is 3.4".

The pilot model of this type tripod was hurriedly knocked together, and in consultation with the Division Ordnance Officer, 1st Cavalry Division, improvements in design have been made. The tripod now under development will weigh about ten pounds, may be mounted from pack in about eight seconds, is equipped with a mil scale for traverse, an elevating gear incorporating an approximate two mil click, and a clamp which permits indirect and overhead fire. This improved tripod is very stable, and test firings at 1000" indicate that the shot group is about fifty percent smaller than that obtained from the original pilot model. The 2d Cavalry Brigade at Fort Bliss is being equipped with such a tripod. These tripods are being manufactured in the 1st Cavalry Division Ordnance Shops.

With the Cavalry equipped with such mounts for the air-cooled machine gun, it is immaterial whether we have spade grip, pistol grip, shoulder stock, muzzle brake, or what not, added to the gun. It will be the greatest weapon of its kind in existence. It is well to realize how fortunate we are in securing this tank machine gun as a replacement for the machine rifle.

For those who weep for the departed machine rifle, our companion for many a year, condolences are in order, but—

True love, new love,
Best take him for your new love.
The dead they cannot rise
So you'd better dry your eyes
And you'd best take him for your new love.

R. I. P.

Remarks on R.O.T.C. Courses

By Major General Edward L. King, Assistant Chief of Staff, G-3, War Department General Staff

THE annual report of the Secretary of War for the year 1930 presents a picture of the condition of the R. O. T. C. which reflects credit upon all who are engaged in its activities. A large measure of this credit belongs rightfully to the heads of our universities and colleges who have been instrumental in making an assured success of this system. However, as pointed out in the Secretary's report, the fact that the R. O. T. C. system contains much to the advantage of the National Defense should not lead us to overlook the limitations which are inherent in this and all similar systems. In considering these limitations it is necessary to keep in mind the primary purpose of the endeavors, both of the institutions which maintain R. O. T. C. units and of the War Department. It is the primary mission of both to conduct the training of the R. O. T. C. students so that they will be qualified ultimately as commissioned officers in the Reserve.

The War Department is intensely concerned with insuring the fact that this mission of the R. O. T. C. is safeguarded at all times. However, it is realized that the success of this system depends, not so much upon an arbitrary set of rules and policies set up by the War Department as upon complete accord between the institutions and colleges of the land, and the officers of the War Department charged by the Secretary of War with formulating and supervising the policies for the conduct of the R. O. T. C. system. The G-3 division of the War Department General Staff which is charged with formulating policies for the R. O. T. C., is sincerely desirous of ascertaining and conforming to the desires of the institutions and colleges maintaining R. O. T. C. units. Naturally, in a system as large as this many divergent ideas are held by the individuals concerned with its operation, and only by a spirit of compromise and a determination to sacrifice individual ideas to the views of the majority, can the full possibilities of this asset to National Defense be developed.

In order to ascertain how successful the R. O. T. C. system has been up to the present time, the Bureau of Education and the Mississippi Agricultural and Mechanical College each recently furnished a questionnaire to former R. O. T. C. students. Many thousands of replies were received as a result of these surveys, and more than ninety per cent of these in each case indicated great satisfaction with the R. O. T. C. system, as it is conducted, and with its educational value.

The War Department also conducted a survey during the year 1930 in which the heads of institutions and others interested were urged to submit frank criticisms and suggestions for the improvement of the R. O. T. C. The great majority of the replies received by the War Department indicated that no material changes are considered necessary or desirable. Such divergence of opinion as was indicated in these replies was principally in regard to the educational value of the R. O. T. C. courses. Space will not permit the enumeration of all the points raised in these replies, but briefly, it may be said that they can be grouped roughly into two general classes—one in which the institutional heads believe that the educational features of the courses should be stressed to a greater extent and the other in which it is held that the military features are paramount to the educational. The replies of Dr. Bowman of the University of Pittsburgh and Dr. Huliheu of the University of Delaware, respectively, are typical of the views held by the two schools of thought on this subject.

Dr. Bowman of the University of Pittsburgh, a proponent of the necessity for greater stress on the educational features of the courses, said in his reply to the War Department:

"The scope of the present prescribed course is not commensurate with the educational qualifications of the R. O. T. C. students. Raise it by substituting informative military subjects commensurate with higher education in place of the present prescribed elementary subjects pertaining to particular branches of the military service."

On the other hand, Dr. Huliheu of the University of Delaware holds that the military features of the courses are the more important. He said in his reply:

"The fundamental purpose of R. O. T. C. training must be kept in view in considering it from the standpoint of education. Its purpose being primarily to create Reserve officers * * * the courses involved must be principally military. Any effort to make of it a direct preparation for the student's civil career would defeat its primary purpose."

Let us analyze these two conflicting views.

Briefly stated, the attitude of the institutions favoring greater stress on the educational features of the R. O. T. C. courses, of which Dr. Bowman's reply is typical, is that the educational aspect of the military objective should be improved. Basically, the governing idea which actuates this view results from an effort to compare the college courses in general with the R. O. T. C. courses. This comparison develops the fact that the *basic* R. O. T. C. course is of a much more elementary nature than the corresponding college course. However, the fact, which is frequently overlooked in this connection, is that no real comparison between college and R. O. T. C. courses can be made

for the reason that the objectives sought in each case are entirely different. In the first place, college work is based upon a twelve-year educational preparation, whereas there is no prior training whatever for the R. O. T. C. basic course. Naturally, therefore, this basic course must in many respects correspond to the courses in preparatory schools. Furthermore, college work is based on the assumption that it will of necessity be followed by an experience course subsequent to graduation, in which the graduate may learn to apply his knowledge, whereas the R. O. T. C. courses are based on the assumption that there can be, of necessity, no subsequent opportunity for the graduate to learn to apply his knowledge. In other words, the R. O. T. C. course must encompass in military education a field which in business and professional education is covered by three courses, namely, the preparatory, the college and the post graduate experience courses. When this fact is realized it will become readily apparent that the educational features of the R. O. T. C. course can not be made commensurate to any degree with the educational requirements of college work. However, that the R. O. T. C. system is a factor of value in the educational work of colleges appears to be indicated from the following statement of Dr. Lord, College of Business Administration, Boston University:

"The Vocational Department of the College of Business Administration assists graduates in securing positions, introducing them to probable employers. The report of that Department for June, 1930, shows that, of graduates selected by employers as first choice or actually offered positions, only ten per cent of the students who had not taken the Advanced R. O. T. C. Course were selected while over seventy-five per cent of the students who had taken the Advanced R. O. T. C. Course were on this selected list.

"This fact may be considered one indication of the value of the R. O. T. C. courses as a factor in education."

Dr. Hogan of Fordham University states:

"The present course is educational, as most of the subjects and instruction are useful in training a student's mind in logical and analytical reasoning."

It would appear logical then to assume that while the R. O. T. C. course is not comparable to the college course as regards advanced educational features, it supplements and furthers the educational progress of the college student.

Now let us look at the other view, that the military features of the R. O. T. C. courses should be paramount to the educational features. This view is based on the conception that, upon the outbreak of war, the Reserve officer must be competent to assume his duties without further training. To achieve this end, the proponents of this view hold that the principal effort of the R. O. T. C. system should be devoted to producing efficient Reserve officers. They realize that there will be no time and no personnel available for the further instruction of the R. O. T. C. graduate when an emergency arises.

It would appear, therefore, that one of the principal matters to be considered by both the institutional heads and the War Department is that of reconciling these two divergent views. This should not be a very difficult matter if the mission of the R. O. T. C. is remembered. The War Department and the faculty ideas of what constitutes the mission of the R. O. T. C. are identical in two respects. Both believe it to be necessary in the scheme of National Defense for the production of: first, a sufficient number of trained junior officers to meet the initial needs of our mobilization plan; second, a large reserve of partially trained, educated men, whose training might be quickly completed for duty as officers or who may render valuable service in noncommissioned grades in the organization and training of units in an emergency. From the viewpoint of the institutions alone the R. O. T. C. appears to be a means of discipline, control and character development considered necessary during the two years in which immaturity renders the student a considerable problem in psychology, not only to the institution but to himself, and, in addition, a means of imbuing the student with a sense of responsibility to the nation. It is agreed, however, that the mission of the R. O. T. C. involves three basic factors—first, that it is a means of discipline, control, and character development; second, that it is a means of imbuing the student with a sense of responsibility; and third, that it is an agency for the production of Reserve officers. To carry out this three-fold mission, both educational and military features must be included in the R. O. T. C. courses. As at present constituted, the R. O. T. C. courses appear to be producing satisfactory results, and before making any material change in these courses, careful consideration must be given to insure adherence to the *mission* of the *R. O. T. C.*

Dr. Crane of the University of Wyoming has submitted some excellent suggestions to the War Department for the improvement of the courses. He states:

"There could well be a revision and rearrangement of the theoretical courses, both basic and advanced, but as to a change in the contents of the military courses I am not prepared to make specific recommendations."

He further says that the Infantry program presents a scrappy appearance—a lot of parcels lacking integration, and recommends a more liberal grouping into fewer classifications, adaptable to college divisions of the calendar. He also suggests an orientation course.

The War Department is glad to receive these constructive criticisms, and thanks Dr. Crane and all others who submitted replies to the War Department survey for their interest. A new tentative program has been prepared by the War Department which it is hoped will carry out some of these excellent suggestions.

It is the policy of the War Department to give serious consideration to *every* constructive idea presented for the improvement of the R. O. T. C. Two suggestions for improvement recently submitted to the War Department are especially deserving of discussion. These were Dr. Crane's suggestions that the development of skill in mechanical action and in the operation of some of the weapons as now required in the R. O. T. C. is questionable, and Dr. Freeman's articles in regard to specialists.

Let us first consider Dr. Crane's suggestion. Skill in mechanical action and in the operation of weapons are subjects fundamental to the enlisted man. In time of war, each junior Reserve officer will probably be given a group of civilians to train in all the details of soldiership, including the tactical and technical use of all the weapons and instruments in his unit. These junior Reserve officers are being trained in the R. O. T. C. units of the Nation today, and each must be so trained that, if necessity requires, he will be able to teach everything that each man in his platoon must know. It is for this reason that the War Department requires R. O. T. C. students to be instructed in mechanical action and in the operation of weapons. In this connection it may be stated that the weapons in the hands of the R. O. T. C. today are the same weapons as to type and model that are in use by the Regular Army, and are the ones which we would probably have to use at the outset of any emergency.

In Dr. Freeman's articles relative to the training of specialists, he expressed the belief that the Basic R. O. T. C. course is training as soldiers men who are being educated to render more valuable service as specialists, in which there existed a vast shortage in the World War. He probably did not realize that the War Department has developed an efficient classification system that is now prepared to meet mobilization needs for specialists of practically every type. Non-military educational and training activities are producing all the non-military specialists needed, and the R. O. T. C. is producing only sufficient military specialists to meet the initial needs of the Army in the event of war.

The War Department is always anxious to receive suggestions and criticisms from the universities and colleges which are cooperating so splendidly in putting over the R. O. T. C. policy of our Government. Those who actively participated in the preparation for and the conduct of our forces in the World War have a deep appreciation for the officer who is a man of action, as well as a student of his profession. In our deep desire to obtain for our Officers' Reserve educated men capable of leading in times of stress, we may be prone to lean a little more than is essential to practical, as contrasted to theoretical, instruction. However, our R. O. T. C. graduate will, through the medium of his general educational training, acquire that mental development which will enable him to arrive at sound solutions of the problems with which he will be confronted. The primary purpose of the R. O. T. C. is to teach the practical application of such reasoning to war conditions which demand rapid conclusions and immediate positive action. If our armies are to be led to success with the maximum effectiveness and the minimum loss, our leaders must be positive, forceful men of action as well as accurate, rapid thinkers. Balancing these considerations one against another, our courses should consist in the main of the practical application of the theory of military science and the leadership of men. These are considered vital elements in the training of combat officers.

In studying the material submitted in response to the War Department's request for constructive criticism of the conduct of the R. O. T. C., it was particularly gratifying to learn in what high esteem our officers are held by the personnel of these institutions. While the success of each unit depends largely upon the support it receives from institutional authorities, the degree of such support and the development of real and enduring efficiency depend upon the qualities of tact, efficiency and leadership of the Professor of Military Science and Tactics.

Again, I desire to reiterate that the War Department is glad to meet any suggestions relative to changes made necessary by local conditions provided the *mission* of *the R. O. T. C.* is safeguarded.

Rochambeau

By André Benéteau, Ph. D. Professor at the Catholic University of America

THE Yorktown celebration, in the month of October, has once more brought back the memories of Franco-American friendship. On the very spot where Lord Cornwallis surrendered to George Washington, we saw reenacted before our eyes the historical drama: a glorious pageantry, the buff and blue costumes of the Colonials, the British red coats, the white uniform of the old French royal army. And now, with eloquent speeches contemporary American and French celebrities recalled to our minds illustrious

Rochambeau

names: Washington, Rochambeau, de Grasse, Franklin, Lafayette, and these days of war and glory, cementing undying bonds of fraternity between the two nations.

While every American remembers with reverence the general who commanded the French forces, yet not so many, perhaps, know of his life before and after the alliance. In American affections, Lafayette comes first. And this as the natural result of his youth and romantic background.

The young marquis had left his country and his lovely wife because of his fervid desire to participate in the realization of a great ideal. He was a voluntary crusader, urged into battle by his own enthusiasm, whereas Rochambeau was the appointed chief of a regular army; he came to America in pursuance of the orders given him by his king. Rochambeau's merits are acknowledged, but he does not appear, in the pages of history, with the halo of knightly and adventurous youth, as the romantic figure of the nice-looking boy, venturing his life for the sake of a *beau geste*.

Let us consider, however, that Rochambeau was more than fifty when the American Revolution started, and that his rank was that of a general in the French army. Born thirty years later, he might have been one of Lafayette's companions. He might have followed in the direction of so many young French noblemen of that time, who, tired of being only inactive courtiers, longed for the opportunity to devote themselves to a noble cause. At any rate, if Rochambeau's age and standing did not allow occasional passionate outbursts and heroic pranks, nevertheless he was, at heart, in deep sympathy with American Independence. "An officer completely in the ideas of the time", a contemporary writer said, "and quite fit to please a crowd of young giddy heads who were to serve in this war." From this we see that Rochambeau did not fight the British just because it was his assigned duty; not only did he carry out his orders but he also had the satisfaction of fighting for principles he cherished, and for men he admired.

Jean-Baptiste-Donatien de Vimeur, comte de Rochambeau, was born at Vendôme,—in the very heart of old France,—on July 1st, 1725. Like Lafayette, he belonged to that *noblesse d'épee* which was certainly the best element in the French aristocracy. These *gentilshommes* were soldiers, not courtiers. They did not stoop to intrigue for the honor of giving the king his night shirt but vied amongst themselves for the glory of setting his flag upon the parapet of an enemy fortress. They did not always know how to conquer but they always knew how to fight,—and to die.

The future general of the French Army in America was at first educated for the priesthood. It is difficult to ascertain if he really had religious leanings; this question probably did not greatly concern his own family. Children had no voice in the choice of their careers; they had to abide by their parents' ambitions. The first born son inherited the château, estates, fortune, and titles; he married the girl selected for him

and was charged with perpetuating the lineage. So Jean-Baptiste-Donatien, being a second son, attended the Jesuit College of Blois. This ecclesiastical education no doubt developed his qualities of thoughtfulness and self-control, his unassuming character, together with a strict sense of obligation and duty.

But the oldest boy of the Rochambeau family died. The younger man became then the heir presumptive. In 1742, he joined the Duke of Saint-Simon's cavalry regiment and took active part in the war of the Austrian Succession, in Bohemia, Bavaria and the Rhineland.

We cannot say whether young Rochambeau would have achieved greatness as a priest but we see that, in the army, he showed himself at once to be an excellent soldier. His calm courage, his disciplined spirit and the military qualities he evidenced promptly drew attention to him. As aide-de-camp to the Duke of Orléans, then to Count de Clermont, he assisted in the taking of Namur by a bold reconnoitering manoeuvre. In recognition of his prowess, he was appointed colonel of the *Régiment d'Infanterie de la Marche*. After being gravely wounded at Lawfeld in 1747, he recovered soon enough to fight in the siege of Maästricht, the following year.

Even in these times of continuous warfare, such accomplishments were remarkable for a twenty-three year old boy. After the signing of the peace at Aix-la-Chapelle, he was already advantageously known and appreciated. He might have been satisfied with his past deeds and become a prominent figure in the court of Louis XV. But he felt no attraction for the elegant and useless life of the pampered lords of Versailles; he was too much of a soldier and, let it be said, of a man. He belonged to the kind of people who fail to understand how healthy and apparently intelligent persons can find perennial amusement in witty conversation, in well performed dances, in ribbons and laces, and rack their brains and bend their backs to win a word or a glance from a pleasure-crazed monarch.

In 1749, Rochambeau married Mademoiselle Tellès d'Acosta. France was then at peace. The young colonel attended to his regiment, which had become under his direction one of the best fighting units in the French army. At the beginning of the Seven Years' War, which was to be so ruinous for France, he joined the expedition of Minorca, in 1756. Ordered to Germany, under the command of Marshal de Clermont, Rochambeau with his regiment held back the entire Prussian force at Crevelt.

He was colonel of the *Régiment d'Auvergne* in 1759. Shortly afterward, at Minden, he prevented once more a defeat from turning into disaster by covering the retreat of the French army. Strange to relate, his future opponent, Lord Cornwallis, was present in the same battle, in the English ranks.

The next year, while Rochambeau was still in command of the *Régiment d'Auvergne*, an incident occurred, which is as famous in France as the story of Nathan Hale, for example, is in America. On October 15th, 1760, the French army encountered the Hanoverians near Klostercamp, in the Rhineland. At nightfall, Rochambeau ordered one of his officers, Captain Louis d'Assas, to patrol a wood presumably occupied by the enemy. D'Assas left, accompanied by Sergeant Dubois. They had scarcely taken a few steps among the trees when they were surrounded by a party of Hanoverians, who motioned them to surrender and to keep still. But d'Assas, realizing that the French were in danger of being surprised, shouted the famous words: "*A moi, d'Auvergne! Voilà l'ennemi!*" He and Dubois fell instantly under the bayonets, but, due to their sacrifice, the battle was won. Rochambeau, although wounded in the early stages of the fight, remained at his post until assured of victory.

As *Maréchal de Camp*, then *Inspecteur de la Cavalerie* in 1761, Rochambeau acquired more and more renown and esteem. The ministers, d'Aiguillon and de Saint-Germain afterward, frequently asked his advice. He was promoted to the rank of lieutenant-general in 1780 and designated to command the French troops sent to the newly born United States.

Rochambeau Monument in Washington

We do not need to remind American readers of the operations which culminated in the surrender of Cornwallis. Rochambeau gained the respect and approbation of all Americans. His soldiers exemplified efficient discipline and commendable deportment. He never tried to inflict his views upon Washington, to whose instructions he was always amenable. One hundred and thirty-six years later, General Pershing, generously offering his services to Marshal Foch, gave just as great a proof of solidarity and cooperation.

Upon his arrival in France, bringing with him two English cannons, a gift from the American Congress, Rochambeau was awarded the blue ribbon of the *Croix de Saint Louis*, and appointed military governor of Picardy.

Tragedy was in the air. The extravagant expenditures of the court, in face of an acute financial crisis, the wretched misery of the people, the growing outcry for a general reorganization of the kingdom,—all presaged impending change. Rochambeau was among the clear-sighted men who discerned what would happen, unless reforms were quickly effected. He participated in the second *Assemblée des Notables* called by Necker in 1788, to prepare the famous *Etats Généraux* that initiated the Revolution.

But he was no more politician than courtier. His proper place being with his soldiers, he stayed there, ready to answer the call, whenever his country should need him. Many noblemen, frightened by popular uprisings, realizing their existence to be menaced, left France. We can be assured that even the thought of escape never occurred to Rochambeau. In 1791, Louis XVI bestowed upon him the supreme dignity of *Maréchal de France.*

The following year, war with Austria broke out. The French army was then in a sorry plight. A large number of officers were no longer in France; regiments were completely disorganized, and the clamor of *la patrie en danger!* had not yet inspired the reckless courage which, later on, brought hundreds of thousands of men to the defense of the Fatherland. With these troops deficient in spirit, lacking proper leadership, wanting ammunition and supplies, no offensive operation could succeed. The commanding general Dumouriez planned to invade Belgium. Rochambeau advised him to remain on the defensive for some time to come. Dumouriez notwithstanding attacked the Austrians and was badly defeated at Quiévrain. Whereupon Rochambeau resigned and withdrew to his estates in Vendômois. Let us not forget he was a nobleman; if he had sincerely hoped for reforms, he could not help feeling offended, even disgusted, by the mad demagogy which heaped destruction upon destruction. As it happened, his title of count was more than enough to make him a suspect and subject him to arrest. He spent several months in the Conciergerie prison, in Paris, and was free to return to his castle only after the downfall of Robespierre. From this time on, he lived in retirement, writing his memoirs and seemingly forgotten.

In 1803, he met Napoléon Bonaparte. The First Consul, who became Emperor one year later, treated the old warrior with all due respect and granted him a marshal's pension. The interview between these two men symbolizes the spirit of the rejuvenated nation, embodied in the illustrious young conqueror, paying a supreme homage to the past,— as if the tricolor flag saluted that of the ancient *fleur-de-lys* before superseding it in proclamation of the glory of France.

Rochambeau died, eighty-two years old, in Thoré, department of Loir-et-Cher, on May 10th, 1807. He had lived enough to witness the first and best part of the Napoleonic era. He closed his eyes in a period when the power and splendor of his country had never before been equalled. He left an unstained name to his son, General Donatien-Marie-Joseph de Rochambeau, who was killed at the battle of Leipzig in 1813. The last great general of royal France, he remains in history a noble, a splendid figure, forever associated with Washington and the attainment of American liberty. He will always be revered by two nations, his character will always command esteem, his deeds will always inspire admiration. He personified military virtue at its best. While France, so rich in heroic soldiers, can be particularly proud of Rochambeau, America also has cause for never forgetting him.

YORKTOWN, 1781, by Colonel H. L. Landers, Historical Section, Army War College. 219 pages; 19 illustrations; 7 maps. 1931, U. S. Government Printing Office.

George Washington, resourceful and successful commander in chief of our ragged Continentals, is at his best in the remarkable series of land and sea operations that culminated in the surrender of Cornwallis at Yorktown. His masterful leadership in effecting the final concentration, involving the employment of French and American troops in harmonious cooperation with the French fleet under De Grasse, is ably presented in "Yorktown, 1781."

In preparing this book, the author has gone deeply into the most authoritative original sources, and has studied the ground with an appreciative eye for military values. His work displays not only professional military training, but a breadth of view which embraces the background of diplomatic maneuvers, in England and France, that had direct bearing on the outcome of the struggle then going on in America. Among the chapters devoted to the leaders on both sides, those on Lafayette, D'Estaing, Rochambeau, Cornwallis, and Franklin at the court of Louis XVI, are especially worthy of note. The story of the sea battle between the fleets of De Grasse and Graves, off the capes of Virginia, is one of absorbing interest. It is the most comprehensive account of this action that has appeared in print, and the only one that is adequately supplemented with a battle map showing the positions and movements of the ships.

This book is published as Senate Document No. 273, 3d Session, 71st Congress, by the U. S. Government Printing Office. It is beautifully printed, well-illustrated, and supplied with excellent maps. For the Yorktown area, the maps show both the fortifications of 1781 and the present road net, so that a person on the ground would have no difficulty in orienting himself. In addition, there are several oblique airplane views of Yorktown and its environs. A limited edition, cloth bound, is available for distribution by members of Congress; additional copies may be purchased from the Superintendent of Documents, Washington, D. C., cloth bound, at $1.75 per copy. This book deserves a place on the shelves of every public and military library in the United States.

Contrasts of 1931–Mobility or Stagnation*

By Captain B. H. Liddell Hart, British Army

THE Army exercises of 1931 were remarkable for two extreme contrasts. And were, in consequence, the most illuminating since the war. The first picture was seen in August, when the atmosphere of another August, seventeen years ago, was re-created at Aldershot by the mobilization of the 1st Division (less one infantry brigade) at war strength.

The primary idea underlying this mobilization was that of seeing what reductions could be made in the stores and equipment carried with units, as a means of improving the mobility of the division. But its immobility was the ultimate lesson of the mobilization.

It may be true that imagination and calculation could have provided an approximate answer on all save the most detailed questions. But as with a car, so with an army—the most thorough of makers' tests is not an adequate substitute for the service test which comes when a model is placed in the hands of the ordinary user. Moreover, the test mobilization had a psychological result too marked to be missed. I am not referring here to the spirit of the troops under trying conditions, and the striking way in which men of different units merged in composite battalions. But the test brought home to officers the unwieldy bulk and complexity of a division as at present constituted.

Four years of siege warfare, coupled with the natural growth of needs and invention, converted the soldier into a living Christmas tree, and the military unit into a superpantechnicon. After the war the trumpet-call of "back to open warfare" did not avail to reduce these immovable walls of Jericho. Something was done to lighten the load on the soldier and on the horse—by transferring it to his transport. But this meant increase of transport. Even if the individual soldier can march a little easier, his effective rate of movement is governed by the scale of his movement in mass—by the size of the column, the possibility of handling it, and its vulnerability to interference.

The problem has been partly obscured since the war by the skeleton size of units when taking part in peace time maneuvers, and the fractional proportion of transport therein employed. It needed a mobilization to lift the veil, and to focus attention on the urgent need for reducing mass to manageability. Much of the superfluous fat is undoubtedly caused by the military tendency to provide for every contingency. Possibilities too easily come to be regarded as probabilities, and luxuries as necessities. It is an old, old story—a case of fatty degeneration.

Thus did the armies of 18th Century Europe swell until dispersed by the ragged but mobile mobs of the French Revolution. Thus likewise, did the armies in the American Civil War grow stagnant from their own bulk until Sherman showed the way back to mobility by a ruthless scrapping of transport and equipment. It may not be possible for the modern British Army to contemplate such reliance on "living on the country," but something must be scrapped in the Sherman spirit if that army is ever to move. And it is interesting to note that this 1931 experiment seems to have had its germ in a proposal that the year's training should take the form of a "Sherman march." In a characteristically watered form that was the purpose expressed in the 1st Division "trek."

Preliminary analysis of the problem brought to light some curious facts. It was found that since pre-Boer war days units had been dragging round with them a fortnight's supply of various consumable stores. And, presumably through oversight, this burden on transport had continued during the static warfare of 1914-18, in spite of the ease with which replenishment could have been made by motor transport. Again, in the process of removing weight from the cavalryman, his emergency or "iron ration" was transferred to the transport, which was actually carrying his next day's ordinary rations! An infantry battalion, also, still carries with it twelve miles of telephone cable.

The post-war state of the division can, indeed, be summed up as a case for "slimming" treatment. Cure has, in part, been delayed because of tardiness in exploiting the increased mobility provided by motor vehicles. So long as the Army was dependent on horse transport a division was compelled to drag an endless tail of vehicles around with it, to meet not only its immediate necessities put possible contingencies. But the speed and range of motor transport make it possible to bring forward stores from rail-head as and when required.

Hence it is practicable to reduce the number of lorries (trucks) that actually accompany the division. And this the authorities have now done. They have also substituted 3-ton six-wheelers for light lorries in the divisional train. This substitution combined with the elimination of stores allowed the number of vans and lorries to be brought down from some seven hundred to about five hundred. The course of the "mobilized" exercise, although cut short by General Rain, seems to have satisfied most people that the reduced scale of the divisional transport was practicable.

In contrast, attention was forcibly focussed on the truth that the real movement problem, and the danger of congestion, lies within the fighting body of the division. And that it is due to a superabundance of cumbersome horse traction, if also to an overload of equipment. How many people realize that a division still includes some 5,500 horses and mules and some

* It is expected that the *Army Quarterly* (British) will publish concurrently this article by a writer, who has been for several years one of the foremost exponents of the complete mechanization of arms.

740 horse-drawn vehicles? The disadvantages of this incubus were vividly brought out during the exercise.

Previous to it, an astonishing misconception of its meaning became current, even among soldiers, and was due apparently to a misleading explanation being imparted to the press. For the test was spoken of as an attempt to solve the difficulties, especially the congestion, that had been introduced by mechanization! One even heard it said that the difficulty of moving a modern division was due to its mechanization. This naive comment ignored the fact that, apart from the rear services, only a few fragments of the division were as yet motorized. Among them was one motorized infantry brigade signal section, and one motorized field company of engineers, the latter a striking example of successfully applied mechanization. But how few were these "modernities!"

Thus when the mobilized division marched out from Aldershot the first real impression—it seemed a surprise to many spectators—was how little the division had changed since the war. One watched the same interminable chain of foot-slogging men, interspersed with horse-drawn limbers and carts. The most visible differences were supplementary without being novel—the addition of a brigade of light artillery and of a divisional cavalry regiment. These have contributed to increase the road space occupied by the division from some fifteen miles before the war to nearly twenty miles.

Thus it was natural that all observers should be struck by the immense length of the columns. Twelve years had passed and memories had faded since battalions half a mile long had been seen on the march. And half this space is occupied by horsed limbers, cookers and carts. If bombed from the air or fired on by tanks, the men in the column might scatter and re-form—with a loss of time. Horsed limbers cannot. A chain that has such rigid links is perilously inflexible under modern conditions. Even greater was the impression of cumbrous bulk made by horse-drawn divisional artillery, each battery of six guns, and each brigade stretching well over a mile. But they at least did not look so anachronistic as the field companies of engineers, marching on their feet—so as to be sure, as cynic or realist might say, of arriving late and tired at any emergency point where their services might be needed.

"So you've come to see the old-fashioned Army?" a staff acquaintance remarked to me. It seemed to me that an answer of symbolical fitness was, at that moment, supplied by the appearance of an ice-cream barrow bearing the legend "Stop me," which was being pushed by a boy, on foot, in front of the column. But the "gradualness" of military progress was to be even more vividly illustrated by a subsequent procession of the lumbering old horse-ambulances which constitute my first childhood recollection of the Boer War. I presume they had been unearthed from a military museum to take part in this 1931 mobilization.

Meantime, above the columns, serenely sailed flights of aircraft, taking photographs of the points where in war bombs would have been dropped. They had plenty to photograph. For the columns, each originally seven to eight miles long, soon began to stretch out—but not with elasticity. The steep gradients of the Hog's Back were the cause of "echoing" hitches which brought out the difficulties inherent in the mass of animal transport, even when free from the enemy's intervention.

But the delays gave one leisure to look overhead—and to think ahead. Then one's eyes came down to the ground—to the interminable columns with their mass of men and horse-drawn vehicles, slowly winding along the road. The sight gave one a shock when one thought of the development of new means of interference—not only air bombers, but tanks and motor guerrillas. How thoroughly did it so seem to the Chief of the Imperial General Staff in 1927, when he declared that "crowds of men are out of place on the battlefield" in the face of such weapons. "Think again of the result of the destruction of their communications and supplies!"

In the years since then we have seen infantry forces repeatedly paralyzed, even under peace conditions, by the mere presence of such menaces. To move at all they have to take infinite precautions. In war, what is now a snail's pace would become full-stop—and deadlock. And, while we have witnessed the growing moral and mobile domination of aircraft, tanks, and motor-cars, we have not seen the effect of another war-time check—mustard-gas. It is well to recall that the C. I. G. S. said, "I don't see how, in modern warfare, we shall be able to use enormous numbers of men and horses if mustard gas is employed to the extent that I imagine it will be."

The truth is that a large force of foot troops will not be able to arrive anywhere in the time available. Yet these crowds of men and horses still make up the bulk of the army, and have not been cut down to provide the money for less impotent types of force.

After the mobilization a failure to recognize the facts is unlikely to remain a check or excuse. For I have never heard such concordance in criticism as occurred among the soldiers who watched it. The call for reform and progress seemed as universal as it was urgent. The pity is that the awakening waited until the year when an economic crisis has not only made money tight, but curtailed the latitude in apportioning what there is.

Unfortunately, one now hears the argument that the military need to replace man-power by machine power must yield to the need of keeping soldiers in employment. The practical reply would seem to be that even the dole is but a fraction of what an infantry soldier costs the hard-pressed finances of the country. And all infantry beyond the proportion who can be provided with, and backed by, up-to-date armament are militarily superfluous. They are, indeed, merely a present charge and a potential pension increase of the national debt in case of war.

As for the proportion of infantry who remain, and are worth keeping, it is inconceivable that they will march on foot as a normal thing. Those who are used as guards and garrisons would be brought forward to

their posts by rail or 'bus. The "light infantry" required for mobile operations need special transport and training. I foresee such units being made up of a proportion of motor machine gunners in little armoured carriers, a larger proportion of skirmishers in "baby" cars and a reserve in six-wheeled lorries or 'busses.

The still prevailing practice of mixing motor vehicles and marching men in the same column obstructs mobility, increases wear and tear, and wastes petrol (gas)—with consequent waste of public money. And the present numerical strength of battalions is not attuned to the development of light machine guns and automatic rifles. Motorized battalions could, with advantage, be half the present strength in men.

As for the training of such modern infantrymen, the guerrilla exercises carried out by the Guards' Brigade and some of the London Territorials this year not only relieved a season that was rather drab tactically, but pointed the rational and natural way to develop a ruseful and resourceful type of men. Such exercises call on and develop the intelligence necessary to combat machine-gun nests. I have long argued that a course of guerrilla warfare would be the best means of teaching tactics. It was left for the Guards to prove it. Their schemes in the Vale of White Horse were designed to revive the characteristic nature of British warfare, and to cure the "tactical arthritis" which is a consequence of a too long and too slavish practice of continental methods.

These methods, for all their technical thoroughness, tend to mould commanders into cogs of the machine. The need today is to breed tacticians. While it is unlikely that any future Continental war will see "masses" of the 1914-1918 type functioning effectively, it is still less likely that, even if such warfare were possible, it would fit the military problems and possible expeditions which lie on our Army's horizon. In a "mass" army it suffices if brigade and battalion commanders are competent military foremen, but for the "British style" of warfare we want everyone of them to be capable of acting on his own—to be, if possible, a potential Wellington or Clive.

But the greatest contrast to the negative lessons of the 1st Division mobilization came through the positive experience of the "1st Brigade Royal Tank Corps." The formation and first trial of a complete brigade of tanks under Brigadier C. Broad provided the brightest spot of the military year. One can only hope that it is a first instalment of that progress forecast by the C. I. G. S. in 1927 when he spoke of creating "armoured divisions," and declared them to be the only means of making mobility possible on the battlefield, and "to revive the possibility of the art of generalship." With all the weight of his authority he then declared that the human race would not again stand such losses as accrued in the last war, and that civilization itself would go to pieces if a war was fought on similar lines.

Those who have long urged the formation of an all-armored force, freed of old-style impedimenta and given scope to practice mobile or, better still, "Mongol" tactics, had their long-awaited justification last September. The exercises proved the most significant experiment since the war; indeed, in all tactical experiment since Sir John Moore created the Light Brigade for the struggle against Napoleon. The Imber Area may take its place with Shorncliffe Camp as a landmark in the history of the British Army. Indeed, with all sobriety one can go further in suggestion. For just as the Imber plateau stretches wider and higher than the Shorncliffe plateau, so may the tactics tried there—in affecting the future of armies and of land warfare.

Armored mobility was at last applied in a true way—fitted to its nature. In previous years there has been a tendency to rely on armor to cover any frontal bludgeon stroke, as a guarantee against having to pay the price of one's folly. This year armor was simply utilized as an additional security to the value of speed—to the power, which a tank force possesses, of swiftly circling round any strongly held position and piercing its weakest spots. Nor was that all. For the key idea of the new tank tactics became that of "indirect approach." And this was not simple, but cunningly compound. The light tanks—small, nimble, and hard to hit—always sought to "draw" the enemy by approaching from an unexpected direction. And when their stings had drawn the enemy's muzzles in one direction, the medium tank punch would crash home from another direction.

These mixed tactics are helped by a mixed composition of tank units down to the company. The new tank brigade comprised one light tank battalion and three "mixed" battalions, each made up of three mixed companies and a section of close support tanks. For an innovation this year, which one has long advocated, was that the company should combine both medium and light tanks—a section of five medium, and one of seven light tanks.

If such a mixture has a naval aspect, suggesting a squadron of battleships with its attendant destroyers, it has a "Mongol" ancestry. The combination makes possible the distracting and paralyzing tactics by which Genghis Khan's incomparably mobile horsemen triumphed over the solid battle-arrays of medieval Asia and Europe.

Yet less imagination is needed to see a modern parallel than to conjure up the rest. Even though there were marked differences, there was a fundamental similarity between the maneuvers of this brigade of "landships" and those of a battle fleet at sea. At Imber we truly saw the first "fleet exercises" of the Royal Tank Corps.

The parallel became vivid not only in some of the formations which the tanks adopted, but also in the way they were controlled and maneuvered as a unity by wireless and flag signals. A new and simple two-letter code had been devised, and orders for maneuver were given by it either through the display of combinations of two flags, one above the other, or by wirelessing the two letters in Morse. These signals covered a remarkably comprehensive range of orders.

And they were supplemented by the radio telephony with which the tanks were fitted.

The tanks maneuvered either in close or open order. In close order there was 25 yards interval between the tanks. In open, or fighting, order the intervals between medium tanks were doubled, and one saw the light tanks of each company move out to "protection stations."

There was a peculiarly strong flavor of Mongol battle drill in two of the swift maneuvers that were made at "signal-notice." A particular pair of flags were shown which meant "single flank attack"; thereupon the medium section circled round to strike the enemy's flank, covered during its move by one light sub-section, while the rest of the light section pinned the enemy with fire from its original position. Another pair of flags meant "double flank attack"; this time the bulk of the light section would move off to strike the opposite flank to that which the medium section was attacking.

The brigade training opened with a series of five exercises, each of which was carried out by the different battalions in turn. The opening feature of each exercise was in itself so novel as to grip one's attention, for it revealed a new system of "leadership" that had been devised. The brigadier had as assistants, besides a brigade major and an orderly officer, three "field officers," who acted in a way similar to Napoleon's expert aides-de-camp—and were mounted in light tanks. During the immediate advance to the battlefield the brigadier went ahead accompanied by two of these field officers and by the battalion commanders—all in tanks. Behind came a second party of tanks containing two company commanders from each battalion. Third came the brigade mass, which was temporarily commanded by the remaining field officer.

When the brigadier had made his reconnaissance and issued his orders, indicating the "brigade center line of attack," the battalion commanders would track away in their tanks to reconnoiter and choose their own center lines. Meantime one of the field officers who accompanied the brigadier would drive back to take over the brigade mass and lead it forward, bringing it up at right angles to the chosen brigade center line. As the mass of tanks came up one saw the company commanders drive into position at the head of their companies and lead these along their respective lines.

The whole process went with a swing, and the tanks avoided any halt under fire. It was an extraordinary vision of the new warfare, if it also recalled the remote past, when knights in armor pranced and caracoled at the head of their mailed "battles." The likeness was increased by the parti-colored signal flags which fluttered from the lance-like masts of the commander's tanks. But it was far less obvious than the marshalling of medieval chivalry must have been. These modern mail-clad knights not only move faster and waste less time than their ancestors, but are now growing skilled in using ground as cover.

The first of the exercises was really a test of such "groundcraft" each battalion in turn moving in close order under cover of a ridge, and making changes of direction in order to avoid both impassable ground and hostile shell fire—the latter represented by blue screens and smoke puffs. Finally, the battalion had to cross the ridge in view of the enemy, changing its formation to reduce its vulnerability. Rapid execution of these various changes was the keynote of the exercise.

The second was a more advanced test, covering the deployment for battle. In the third we saw a normal type of maneuver attack—against the artillery area of an enemy force. For against an enemy in position his artillery is now taken as the natural target of a tank punch rather than his infantry, who being spread out along a front presumably dotted with anti-tank guns, form a relatively unprofitable object to strike. The guiding principle is to strike in against the rear of the artillery area, or the administrative area, after a quick move round the enemy's flank. Even if the guns are turned in time to meet the indirect approach of this menace, there is no guarantee that they will be able to stem the steel attack. For it is this grimly playful way of the nimble and relatively invisible light tanks to draw the enemy's fire just before the massive medium tanks debouch from a different direction and sweep down on the guns. From what I heard, artillery experts are of opinion that, having turned once, it would hardly be possible for the guns to make a fresh turn in time.

In the fourth exercise, the tanks were set a harder and more complex problem. It was assumed that the enemy had been able to spare enough anti-tank guns from his front to put a screen of them round his artillery area. The anti-tank machine-gun is certainly a more dangerous obstacle than the field-gun. It is easier to conceal; its fire is harder to spot and more easily switched in a new direction. There is, however, some compensation in the fact that its sting is less fatal. And the gun is hard to move—unless it be mounted in a tank. The best antidote certainly lies in the light tank. For this offers only a small target and it is far more agile than the anti-tank gun; its two-man crew enjoy the protection of armor, while the crew of the anti-tank gun are exposed.

On these considerations the new "anti-anti-tank-gun" tactics are based. A few scattered guns can easily be overrun by a tank force in its onward surge. If there is a thick screen of them they have to be tackled more warily. In country where cover is good and fields of fire limited the light tanks may be counted on to carry out the "sweeping" task, stealing upon the guns unseen, and smothering them with bursts of fire from various directions. But in open country, with its long fields of fire, a more methodical process may be necessary.

The key principle is to approach from an unexpected quarter, so that the anti-tank guns have to shift their position—and thus disclose themselves.

In the actual exercise witnessed, the enemy artillery area was covered by a five-mile semi-circle of anti-tank guns west of Imber. The light battalion of the tank brigade was assumed already to have cleared the north-

west fringe, on Summer Down, of this anti-tank screen. The leading mixed battalion had moved up, and was lying in wait behind the shelter of the ridge. Its commander, according to the new system, was on ahead in his tank, accompanying the brigadier.

He now received orders to attack and clear the south-western sector of the enemy's anti-tank screen, with the help of an additional light company. The way would then be open for the mass of the brigade to be launched into the enemy's artillery area from the rear.

At 2:07 P.M. the brigadier's tank had roared up. At 2:10 P.M. his orders had been issued, and a field officer was dashing back in a tank to fetch the leading battalion. Meantime the battalion commander surveyed the ground and decided on his plan.

The co-operating light company was to circle out to the south-west across the low spurs, draw the enemy's fire, and pelt him in return. The leading mixed company was to strike in from W. N. W. behind the ridge and sweep astride the back of the chain of guns. The second would follow it, but turn south down the first spur. The third company would in turn sweep down the next spur, while the second company was rallying ready to descend a farther spur.

At 2:15 P. M. these orders had been given. A few minutes later the battalion appeared in sight, deploying for action. At 2:26 P. M. the leading company had launched the attack. The close-support tanks followed on the heels of the mediums, and fired smoke-shell to "blanket" the more distant guns while the nearer ones were being dealt with. A fresh mixed company was then launched through at a fresh angle to smash the rear links in the anti-tank chain.

On such combination of tank-types and on instinctive co-operation between sub-units success would depend in war. That co-operation will be the fruit partly of trained initiative and partly of a battle-drill that revives the Mongol method.

In the fifth exercise the tanks were given the task of attacking a marching enemy column. As the last of the series, this was presumably regarded as the most advanced and difficult test of maneuver. It may have been the most difficult maneuver, but it was certainly not the hardest practical problem to solve—and would not be in war. One had to recall the recent march of the mobilized 1st Division near Aldershot, slowly coiling its immense length and swollen bulk along the road, to realize what a target is offered by a war-strength infantry division.

To-day the supposed infantry column was a comparatively small one, generously endowed for its size with anti-tank guns. It was marching south across the Plain from Bratton to Heytesbury. The tank brigade was coming from the east, and its advanced guard was checked by a screen of anti-tank guns, only 200 yards apart, which the marching column had put out along a ridge to cover its flank.

While the tank brigade mass halted behind the next ridge the brigadier drove forward in his tank to join the light battalion and reconnoiter the situation. In a few minutes he sent back the order, "Right encircle" to the field officer in charge of the brigade mass. He then turned northward himself with his tank party and headed for a patch of woodland known as Tinkers Firs. The brigade mass also changed direction and moved to the same hiding place, covered by a company detached from the light battalion. The original advance guard, staying where it was, now became a flank guard, and laid a smoke screen—"an artificial hill"—to cover the encircling maneuver.

Arrived at Tinkers Firs, the brigadier found he was on a line with the tail of the marching column at Bowls Barrow. Detaching one of his three mixed battalions to attack the screen of anti-tank guns, he promptly led the brigade mass in a swift circuit to the north round the enemy's tail, aiming to reach the high ground due west of it.

On reaching this high ground the brigadier turned his tank's bows to the east, to indicate the new direction, and gave the signal "Open order; attack" to his leading battalion. Thereby he launched it against what had been the far flank, and was still the unguarded flank, of the enemy, whose anti-tank weapons would be more than fully occupied in meeting their immediate assailants.

The enemy's aircraft may have given warning of the original approach in time to put out an anti-tank screen, and this had been assumed as able to hold up the tank advance guard. But having put out the anti-tank guns, the enemy could not easily shift them, and the separate attack launched against them was calculated to fix them beyond any possibility of such a shift.

First smothered with smoke and then flailed with bullets, it is unlikely that they would either be aware, or have a care, of the remote maneuver being carried out by the rest of the tank brigade. For it is one of the oldest experiences of war that men who are being fired at from close range have eyes only for their immediate assailants, and do not give a "tinker's damn" about what may be happening elsewhere.

Tank mobility can exploit this battle-psychology. And in any case infantry cannot change their dispositions as quickly as tanks can change their direction. The master-key with which the tankman may open any barred door is his 360 degree range of maneuver.

A blue and white flag above a forked red flag fluttered from the mast of the brigadier's tank—"Open order." The signal was repeated—"Attack." The leading tank battalion forthwith bore down on the enemy's defenseless western flank. Two companies ran along the edge of the marching column, firing into the mass of men, horses and wagons. It was easy to imagine the confusion, the panic, the stampede that would have occurred in real war.

The medium tanks may sometimes crash through the middle of the column, "pulping" it as did the whippets to the three German battalions they caught at Cachy in April, 1918. But one doubts whether such shock action could increase the chaos that would be caused by a driving storm of bullets at close range.

The light tanks in any case keep clear of the mêlée, "holding the ring," and being ready to deal with any anti-tank weapons which may emerge. But it is hardly

conceivable that even if any were at hand, they could be handled amid the confusion.

The speed with which this wide maneuver was carried out was most impressive. In the case of that executed by the 2nd Bn. R. T. C. the brigadier gave the order, "Right encircle," at 11:10 A. M. At 12:30 P. M. he gave the signal to close. Within one hour and twenty minutes the battalion had covered seven miles in its two bounds, delivered, and completed its attack. A case of "quick disposal," if of "unhappy dispatch" —for the enemy infantry.

After completing this series of exercises, three days were spent in exercise as a brigade. They began with brigade drill—one is tempted to call it drill by a brigade of machine-made Guards. If not always so symmetrical as on the Horse Guards Parade, it was far swifter—and hence more practical. We had the spectacle of one hundred and eighty tanks marching and countermarching, wheeling and deploying, as a single body—controlled by a single voice. The brigadier gave his successive orders by radio telephony from a tank that was sometimes, in the more open maneuvers, a mile or more distant from the recipients. Their execution, in alacrity and precision, certainly excelled the performance of infantry in open battle drill.

The next brigade exercise comprised a six mile advance across country in contact formation, with two battalions "up." After the first bound had been completed, and a light tank screen put out beyond, the reserve battalion was launched through at a different angle against a fresh objective.

In the third exercise the brigade "made rings round" an infantry column in a literal sense, pinning it from the north while they circled round and clove it from the south. Increase of tentacles obviously increases the chance of successful pinning, and the enemy's difficulty in parrying the eventual thrust. And the prevailing mist, wherein the tanks were often indistinguishable from bushes, would have put the infantry in an even more precarious situation. As the tanks emerged from the mist and swept forward the glint of the sun on the tracks made an impression for which one observer found apt words by quoting what was written of a charge of Numidian horse—"the sparkle of their spearpoints coming out of the dust."

The speed of the onsweep would have been still more impressive if armored machine-gun carriers were not still compelled to do duty as light tanks. Suited for working with infantry it was a strain on them not only to keep up but to keep ahead of this fast moving tank force in its rapid bounds across steep spurs and rain-sodden ground. Only a bare dozen of the modern Mark II light tanks were available this year, and they were used mainly as "mounts" for commanders and liaison officers. With their squat toad-like chassis surmounted by a high, narrow turret they seem excellently designed for stealing up behind a bush or crest, and "peeping" their turret machine-guns over it. To watch them sweep forward is to perceive the menace of their speed, agility and unobtrusiveness combined, to infantry and artillery. They are, in truth, an ominously looming cloud on the horizon of all old style forces.

But for that menace to be fulfilled these new and comparatively cheap machines must be provided in sufficient quantity to form a tactical cloud. In driblets they may be merely useful, whereas in a deluge they would be decisive. To provide the deluge we must, however, face the necessity of finding the money by substitution. A light tank with its crew of two men, has more fire-power, and far more effective striking power than an infantry section. Its annual cost would be less than half.

In quantity of such machines lies one means to discount the inevitable toll taken by anti-tank guns. The other means lies in the reborn Mongol tactics which were so well brought out in the exercises. It may be said that these exercises were set and selected by the Tank Corps. The answer is that they were set to test the tank units, and, as designed, were a harder test than these would be likely to meet on any battlefield of the present or near future.

At present anti-tank guns are mostly represented by green flags—which are cheap to provide and easy to wave—whereas an effective weapon, complete with tractor and ammunition trailer, is an expensive item, and far less agile than the light tank. Even if such weapons were manufactured, I cannot see how any infantry division could be provided with enough to form the immense circular screen that would be necessary for its protection. Taking the march of the mobilized 1st Division as an example, a screen at least thirty miles round would be required. This would have to be expanded considerably if the division had to march on a single road, if the columns became strung out, and still more if the screen were extended to embrace the routes of supply.

Now in the test attack on a marching column practised by the Tank Brigade, the enemy's screen was composed of anti-tank guns spaced at two hundred yards interval. On this basis no less than 270 anti-tank guns would be required, as a minimum, to be "in action" at any time, with at least as many on "wheels" to maintain the screen as it advanced and to provide for contingencies. Such figures give some idea of the almost insuperable difficulty of protecting a division on the march against tank attack. Moreover even on such a basis the screen would be but a fragile single line, that would stand little chance against a concentrated tank punch at any point. Tank mobility provides the means of striking within a few hours at any point on the circumference. It provides a 360 degree choice of the point of attack.

With the development of independent tank forces the old linear warfare is replaced by circular warfare. Thus, to sum up, the Tank Brigade, this year, proved capable of creating a new system of tactics suited to its mobility and promising an effective antidote to any immobile anti-tank agents. I have seen the realization of a dream and have few criticisms to offer. The tactics truly fulfilled the Mongol ideal. Perhaps in movement also, now that order has been obtained, it might

be possible to go further and develop "ordered disorder." Officers who flew over the brigade significantly said that from the air it made a very visible if fast-moving target so long as it kept in drill formations. But when the formation broke up as the attack progressed the tanks "simply disappeared" from observation. The moral would seem to be the cultivation of controlled irregularity in the approach as well as in the successive wasp-like attacks.

While "variability"—the power to vary the direction of attack—was the dominant feature of the exercises carried out by the tanks, their invisibility was scarcely less noteworthy. To think of Salisbury Plain is to conjure up a picture of country where tanks can move fast but can scarcely hide. The picture was contradicted by the reality. Even though one knew the exact, and small, area in which they were working, and was following them in a car, it was difficult to locate them. Time after time companies of tanks were swallowed up in some fold of the ground, to emerge suddenly close to their prey. While the noise of their tracks gave some warning of their stealthy approach, it is a deceptive noise to locate, and the presence of so large a number of tanks confuses the listener.

As for controllability, the progress achieved was remarkable when one considers that the new creation was only a few weeks old. And further training will, obviously, increase it. But the fact of supreme significance comes through comparison. For a tank brigade is the only formation that can, in the strict sense, be controlled and maneuvered on the battlefield. With an infantry formation, even a local tactical maneuver can scarcely be accomplished in the day. With a tank brigade a wide maneuver is a matter of hours only; and a local maneuver, of minutes.

To appreciate what this may mean, let us for once lift our thought onto a higher plane than the question of tank attack *versus* anti-tank defense. Let us, instead, consider the tank as essentially a means of moving fire power quickly to any spot, if also of bringing it closer to the target than can be risked by weapons which are handled by unprotected crews. For this is its fundamental value, and would remain, even if an omnipotent armor-piercing weapon was invented. An old-style unit cannot, as a rule, be expected to make more than one attack in a day's battle, and, once committed, cannot be shifted to a different sector. Thus it is practically limited to what one may call "one-point" use of its fire-power. In contrast, a tank unit is capable of a "several-point" use of its fire-power, without special strain or risk. The utility of a tank formation, such as a brigade, has a similar proportion in comparison with an old-style formation. And this sense of proportion ought, therefore, to govern any estimate of their respective economic values for military purposes.

The tank as a "fire-mover" gives a fresh meaning to Napoleon's acute dictum that force is mass multiplied by velocity. This is the true way to calculate force.

We must also remember that material effect is multiplied by moral effect. The fact that the tank can bring its fire so quickly to a spot, and from an unexpected direction, morally multiplies the value of its fire—even apart from any panic which its ugly appearance may cause. Hence the real force innate in tanks is the product of mass, velocity and surprise. They give a commander the chance of fulfilling in a way hitherto unconceived Forrest's famous yet simple recipe for success, that of "gittin' thar fustest with the mostest"—fire and fear.

The History of the United States—is the History of Its Armed Forces

Whether our peace sentimentalists like it or not, the history of the United States is the history of its armed forces. The Army and the Navy are knit into everything that has made the nation possible. The army created it and breathed life into the words of statesmen who conceived the United States as possible in theory. Without the army the theory might have been born, but it could not have lived.

Without armed force the nation, even if it had taken form and drawn its breath would have remained in its colonial domain. Emigration went West behind the army. The battle of the Thames in Canada made Ohio and Kentucky inhabitable. Tippecanoe cleared Indiana for settlement. The army took a quitclaim for Florida from the Seminoles. Texas and the South-west and California came in via the War Department. Hard bitten regiments pacified the Sioux, the Apaches, and other warlike tribes which barred the white man.

The colonies were made possible by their fighting men. The republic was created by them. The Union was saved by them. Its territory was rounded out, defined and maintained by them.

If a citizen of the United States wishes to regret everything that has happened in his country since 1775 and in fact wishes to regret his own presence in America he may deplore the force which controlled the event. He cannot deny its decisiveness.

—THE CHICAGO TRIBUNE

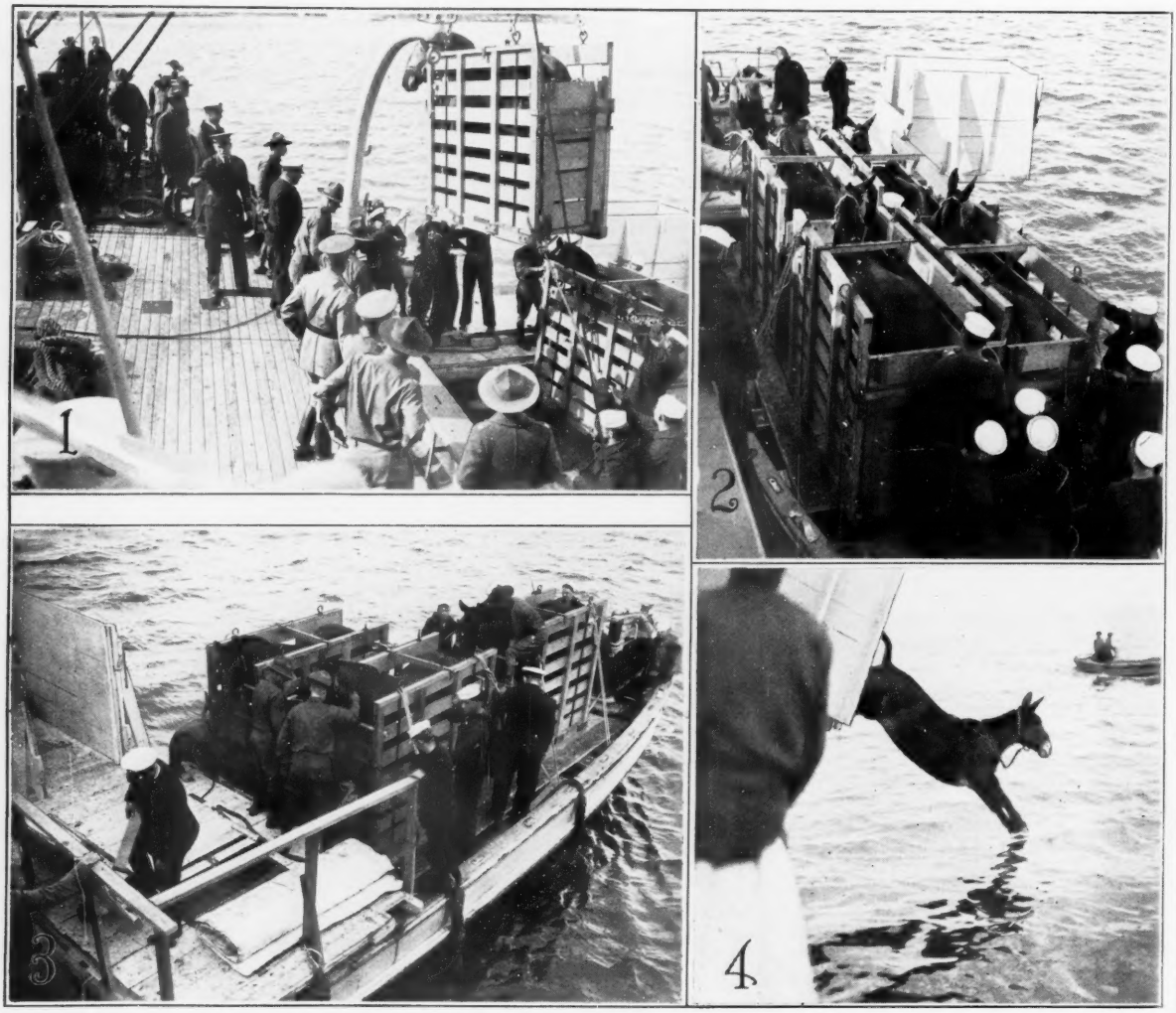
Notes on Animal Swimming[1]

By Captain Donovan Yeuell, 30th Infantry

A FORMER installment of these notes outlined preliminary steps in teaching animals to swim, and carried this training so far as to permit them to pass down a specially-built chute at Crissy Field, enter the water, and swim about a hundred yards to shore. This training has been continued at intervals, and the mules and horses so trained now enter the chute and launch themselves with little or no trouble, following each other down the chute like circus animals. Few, if any of them, get their heads wet, but, strange as it may sound, launch themselves into the water with the same type of motions which swans use in entering from a bank, moving out from the chute with one motion of the hind legs, and commencing their swimming with scarcely a ripple.

In the first article it was stated that no ill effects had been experienced by the animals, which was true at the time, but since then, about 25% of those regularly trained have suffered from "scratches," mostly of the hind legs. In the moist, cold weather that prevails on the bay of San Francisco, this has proven a bit troublesome to heal, but all cases are now well under control. It has been found helpful to clip all animals regularly engaged in swimming, and to keep them

[1] The first installment of Capt. Yeuell's notes appeared in the INFANTRY JOURNAL of November-December, 1931.



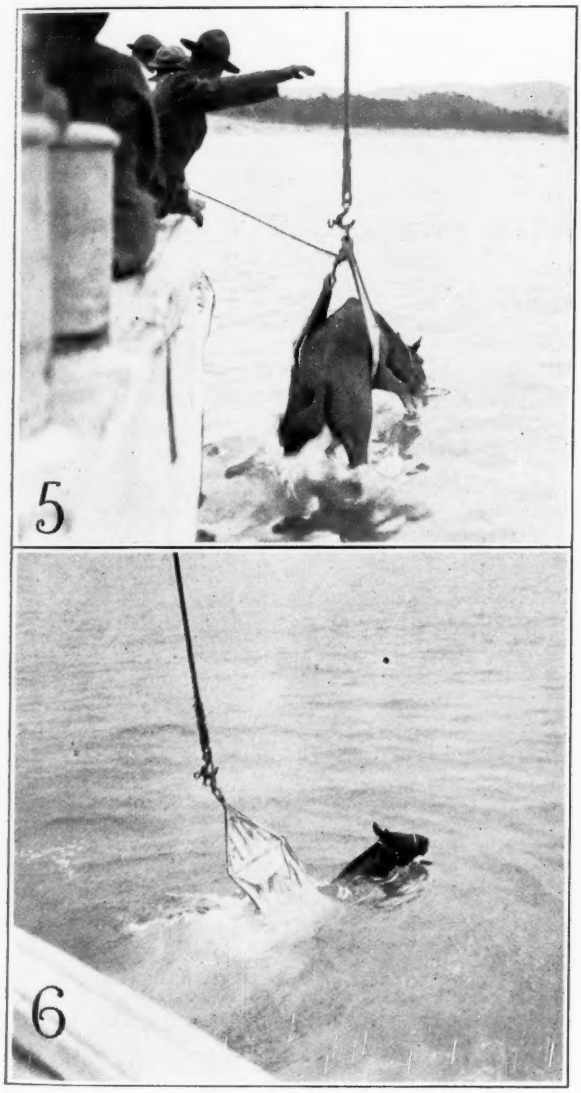
Photos by Signal Corps

1. Blindfolded Mule in Flying Stall being Lowered into Launch. 2. Launch, Showing Flying Stalls and Dumping Stall, Ready to Proceed. 3. Removing End Gates of Flying Stall, Preparatory to Loading Animals Singly into Dumping Stall. 4. The Involuntary Dive from the Dumping Stall.

clipped close. This to some extent keeps the sand and dirt from grinding into their fetlocks, and also helps to prevent infection when they scratch themselves, as they frequently do, on barnacles.

Although all animals were thoroughly clipped in September, their coats, while satisfactory for general service, proved too long in December, not only around the fetlocks but all over their bodies, and it was found it took two or three hours to dry them, even when they were rubbed down with grain-sacks upon landing, and immediately covered with horse-blankets. On cold days, these long-haired animals were walked around until quite dry. The clipped animals, however, dry within a half-hour, and although they lose the protection of the winter hair, it is believed preferable to have them dry quickly, than to be wet for three hours, with consequent opportunities of chilling.

In continuation of the training, local naval assistance was secured, the plan being to approximate as nearly as possible conditions that might be found in making a landing from a transport upon hostile shores. The standard Navy 50-ft. power launch was utilized, and upon this was built what is known as a "dumping stall" (Fig. 2). This dumping stall is pivoted on the sides of the launch, and is held in position to receive an animal by a chain and trigger, which can be released at will. On the sea side is a gate, usually closed; on the boat side is another gate which is placed in position after the animal is in the stall.



5. Just Before Tripping the Sling.
6. Sling Tripped. Swimming Freely.

The accompanying photographs show the various steps taken to get the animal from the deck or hold of a transport into a launch, and finally dump it.

The Army Transport Service built a number of flying stalls (see Figures 1, 2 and 3), into which the animal is led on the dock. These stalls are strong, and will accommodate a fairly heavy artillery horse. The front and rear are padded. In the original stalls, the floors were cleated, but it was found the animals, getting scared, kicked the cleats loose, and experiments are being conducted with split fire-hose. At first the animals were blind-folded, but it was found they seemed much more frightened than those with their eyes clear. The blindfolded animals broke into a sweat as if ice-water had been poured over them when swinging through the air. The illustrations show the eyes for attaching the block and tackle of a mine-planter to the top of the stalls, and also (Fig. 2) the spreaders employed to insure that the animals are not pinched as the crates are hoisted. The end-gates of the flying-stalls, and the iron bars across the top also helped in keeping the sides of the stalls rigid. While in the air the crates kept on an even keel, and the handling by cranes into the launches by the crew of the mine-planter was satisfactory. The one available launch had room for seven flying-stalls, but in order not to overload boats in experimental trips, no more than six were carried at one time.

As soon as the launch received its full complement of animals, it moved away from the side of the mine-planter under its own power to the designated dumping-ground. During the trip of a few minutes the end-gates of the two forward flying-stalls were removed, and bolts loosened on the other stalls. Power-boats were stationed close to the launch when the dumping-ground was reached, so as to keep animals from heading out into deep water, and otherwise to assist as might be necessary. Position was taken about 300 yards from shore, near the Crissy Field dock. Animals were led singly into the dumping stall; the rear gates securely fastened; the front gate opened, and when ready, the trigger was released; the weight of the animal caused the stall to tip, and shot him into the water (see Fig. 4). All animals swam ashore without trouble. When the animals next the dumping-stall had been dumped, the front end-gates of the farther flying-stalls were taken out, and the animals were led through the empty stalls in their fronts to the dumping-stall.

Experiments with the type of equipment shown carry the training as far as it has gone with the 30th Infantry. It was found that, in order to expedite matters,

re-arrangements of the naval launches would have to be made. It was also found that the dumping-stalls were not sufficiently strong to last long in dumping heavy animals. The iron axle, which bore the whole weight of the stall and animal as the latter was being dumped, being of half-inch soft iron, soon buckled and pulled thru its timber supports, which also cracked and became unserviceable. The rear gates were completely kicked out by an obstreperous horse, who didn't fancy his trip. These matters, of course, can be readily remedied, and in future exercises new equipment, modified in the light of these experiments, should obviate the faults previously developed.

At the Presidio of Monterey, the 76th Field Artillery is also conducting training along the lines of this article. They are experimenting both with the dumping-chute used on the deck of a mine-planter and with a specially-constructed sling (see Figs. 5 and 6). In these experiments, although there is no doubt of the animal entering the water from the chute, the height of the rail of the mine-planter appears to give him too much of a drop and subsequent shock on hitting the water. The sling appears to offer perhaps the best solution of actually getting the animals in the water, as it is less cumbersome than the combination of flying-stalls and dumping-stall. Its use, however, would presuppose that a ship large enough to have a crane could get close enough to a hostile shore to place animals in the water within swimming distance. If this be considered feasible, then there would be no necessity for either flying or dumping-stall, as the animal could then be lowered from the transport in a sling to the deck of the mine-planter, and tied on a regular picket line on deck, until it was desired to put him into the water, when he could be slung overboard and forced to swim ashore.

As a third alternative, it is believed, in the interests of simplicity, that flush platforms could be constructed on the decks of naval 50-ft. launches, to which animals could be lowered direct by sling from the transport. On this could be a picket line to which they could be tied until time to be dumped. Then, instead of bothering with a complicated dumping-stall, it is believed they could be forced into the water from a chute, similar to that used in their present training. These methods would save money, time and trouble, and in addition would be easier on the animals.

Number 5 and the Horse

By General Gustavo Adolfo Salas, Mexico

IN equitation, as well as in hippology and in the history of the horse, the number 5 is met with curious frequency. Of course, it is a fact that, sometimes, instead of being 5, it might be 6 or 4, but authors have fixed this figure. Consequently, what follows should not be accepted absolutely. But is there, perchance, anything in life that may be considered as really absolute?

5 are the effects which may be produced by a single rein: 1, opening rein; 2, supporting rein; 3, direct rein; 4, rein of opposition in front of the withers; and 5, rein of opposition behind the withers.

5 are the conditions of the rider's foot in order to be well placed in the stirrup: 1, only a third of the foot is inserted in the stirrup; 2, the feet pointed towards the ears of the horse; 3, heels lower than the toes; 4, the side of the foot corresponding to the little toe slightly raised; and 5, the point of the foot in the vertical line passing through the rider's knee.

5 are the principal qualities of the horse: 1, valiant—nothing frightens him, and he dares to go anywhere; 2, gentle; 3, straight (does not go sidewise); 4, light; and 5, agile.

5 are also his physical qualities which the *charros* express in the following picturesque form: 1, *pechos de casada*; 2, *ancas de viuda*; 3, *cintura de doncella*; 4, *ojos de gasela; y* 5, *cuello de cisne.*

5 are the virtues pointed out by McTaggart; 1, speed of the wind; 2, valor of the lion; 3, elasticity of steel; 4, nobility of a duke; and 5, the proud obedience of the soldier.

In hippology, in treating of the proportions which the well-formed horse should have, it is established that the length of the head is found 5 times in the animal's body: 1, the head itself; 2, from the point of the shoulder to the withers; 3, from the loins to the belly (that is, in a straight line); 4, from the stifle to the point of the hock; and 5, from the point of the hock to the ground.

According to legend, the Arabian horse is descended from the antelope. In the time of Mohammed, the race, which had already become very mixed, was purified in the following manner: In a corral, in front of which ran a stream of water crystal clear, Mohammed caused to be assembled the mares of all the tribes under him. The mares were five days without drinking. Then, the Prophet ordered the gates of the corral to be opened, and naturally the poor animals rushed out towards the water. At this moment Mohammed caused his trumpeter to sound assembly. The majority of the mares paid no attention to the call; but five mares, exhausted, moribund, but docile and obedient, came to him. The Prophet blessed them and designated them as mounts for himself and the four princes; Ali, Omar, Abu Bekr, and Hassan. Furthermore, he gave orders that these five mares should be the origin of the *élite races* and, since then, the purest, handsomest, best horses are from one of the families of those mares, which families bear the names given them by Mohammed: Abaya, Saclaviyan, Kahailan, Handaniyar, and Habdah.

Reserve Officers' Practice March

By Major Eustis L. Hubbard, Cavalry, Unit Instructor, 308th Cavalry

THE idea of this ride originated with a group of Reserve Officers who had been riding outdoors on Sunday afternoons. Lieutenants Goldsworthy, Thomas and Froede thought of riding to Goldsworthy's cabin about 8 miles south of Ligonier, Pennsylvania, spending the night there and returning to Sergeant Cence's farm the following day, a total distance of about eighty miles. They broached the subject to the Unit Instructor, who was glad to cooperate in interesting others of the regiment. Cence secured and conditioned the necessary horses, and the officers who were to make the march assembled at his farm on the evening of Friday, May 29th. The horse equipment had been borrowed from the 107th Field Artillery, Pennsylvania National Guard.

At 7:00 A.M. on the following morning, Lieutenant Colonel George H. Cherrington moved out at the head of the command. The first halt was at Connellsville, where the group was mistaken for a component of the local Memorial Day parade.

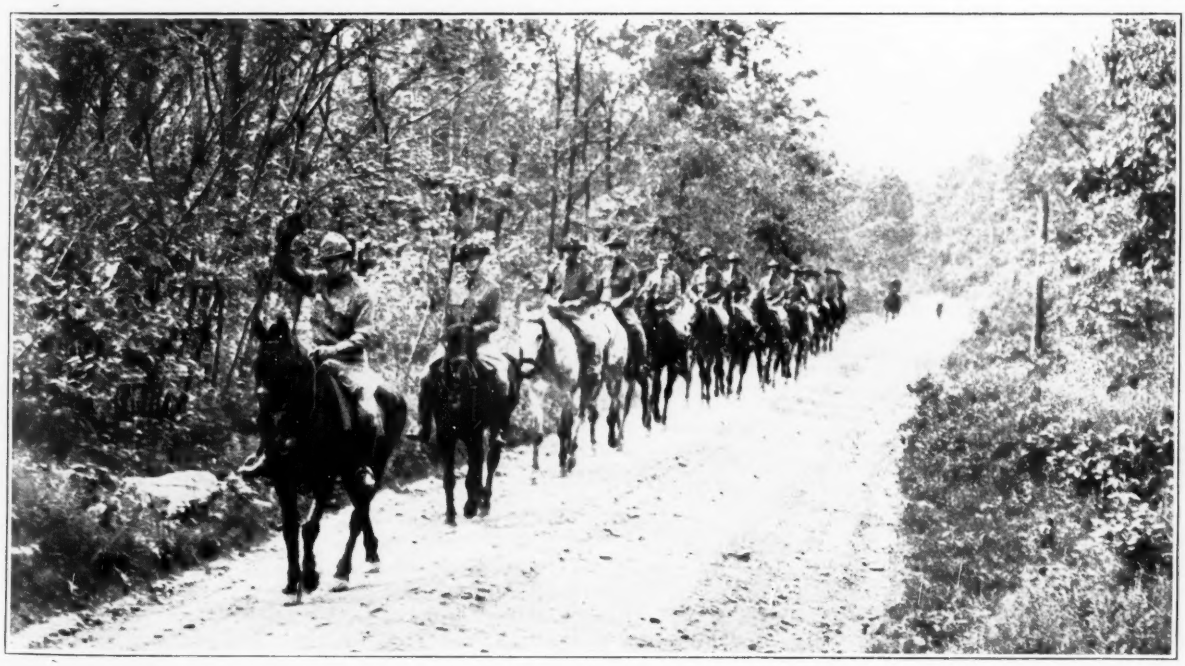
The heat during the remainder of the morning was intense, and more than one longing glance was bestowed on the pop displayed at the roadside stands we passed before we commenced the long grind of lead and walk up the three-mile climb which marked the first stage of our ascent into the mountains. There were, however, no lapses from our self-assumed rôle of seasoned cavalry, and the march discipline continued to elicit the commendation of the regular army officers present. Among these was Colonel Eben Swift, Jr., Field Artillery.

At Jones' Mill, where the noon halt was scheduled, the lunch, which was to have met us at this point, did not materialize, and before long the moment arrived to saddle and bridle again and be on our way. The heat, though still nothing to joke about, had somewhat lessened, and those who had weathered the morning had less difficulty as we proceeded. Halts at Franklin and Hector broke the monotony of the afternoon ride, and at 4:30 we brought our mounts into camp, tired but in excellent condition and capable of considerable further effort, had there been need of it.

When we left the horses, a welcome sight greeted us. In a level space behind the cabin, the table was set for supper. At the sight of food and drink, there was a shout that proved to our host and the cook that their labor was fully appreciated.

The return trip was delightful. The rain had cooled the air, and the clouds which threatened more rain hid the sun. At Jones' Mill we again made a noon halt, where our lunch this time appeared on schedule.

Just before we reached the farm, three officers who had preceded us in a car by a longer but paved route rode out to meet us on horseback. Someone shouted "Charge", and at the end of our 80-mile trip we charged this hostile patrol, scattering it to the four winds, while the "War Correspondent" slid gently over the croup of his rearing mount to the ground, where he sat and observed the action, making notes for the press.



General Remarks on Routine Brigade Supply and Evacuation

In Connection With Brigade Problem November 20th*

THE object of this problem is to prepare this command to quickly take the field with the recruiting allotment actually allowed at this time and to determine just what will be taken, and how it shall be handled to permit the command to function smoothly and without confusion.

This problem involves the 2nd Cavalry Brigade, the 1st Battalion 82d F. A. (less one battery), the 1st Medical Squadron and the 1st Cavalry Division Quartermaster Train. This command will be known as the 2nd Cav. Brig. (reinforced).

This reinforced Brigade is being pushed out in advance of the remainder of the Division, which will remain in Fort Bliss until further orders. In order that the Division can properly supply this detached command it must have from that command a very accurate strength report by organization, showing the number of men, animals, motor vehicles by class, arms by calibre, the amount of ammunition on hand and up to what time the men were rationed and the animals foraged. Since the Brigade has a limited staff, the Brigade Executive has all the above information compiled in a single report, and delivered the day before departure, and at the hour designated by Division. Any changes within the following twenty-four hours will be shown in the daily strength report. In making their reports to the Brigade, organizations must be very accurate, because the Division cannot properly supply the Brigade without the necessary information.

In this problem, the figures of *present* recruiting strength will be used, no matter how many are absent from this particular problem. Because the combat strength in enlisted men of the Cavalry Regiments has been cut down by recruiting allotment to 485 men, it has become necessary to cut down the number of weapons that can be served. Consequently, an organization table to meet the situation becomes necessary, and will be found attached hereto, to be used in this problem.

In order that every one will get a general picture of the routine operation of supply and evacuation, the following general plan is shown. However, different situations often change any routine, and then the plan must be changed to fit the new situation.

Supply—General:

A command which is part of a Division is ordinarily supplied by the Division, by daily routine of supply for Class I supplies. Class I supplies consist of rations, forage, wood, ammunition, and gasoline and oil for motor vehicles.

Ordinarily before leaving camp or bivouac, the men and animals will have had their breakfast.

On the man and horse there will be one reserve ration and a cooked lunch for the man, and a feed of grain for the horse. (The reserve ration will not be consumed by the man without orders from an officer, or in an emergency.) On the kitchen pack is the evening meal for the men. On the spring wagon one feed of grain, three ten gallon cans of water, and wood for the evening meal, also kitchen tent fly and poles.

On ration and forage section of the field train one field ration, one reserve ration, one day of grain and one day of wood. On every motor vehicle one day of oil and gasoline in vehicle and one additional day in containers. On baggage section of field train, authorized tents, officers' bedding rolls, and authorized troop equipment. Field trains should be organized in squadron sections to provide for detachment from the regiment. When possible it must be a rule that there is always a complete day of Class I supplies on the regimental trains in addition to what is on the man and horse, and in the spring wagon.

The above arrangement does not provide for long forage, which should be obtained locally, by grazing, or otherwise provided by Division, because the amount of transportation available to a regiment is not adequate to haul long forage.

On account of the difference in rates of march of the spring wagon and the escort wagon, it is necessary that on the march, whether in the presence of the enemy or not, they shall march in separate columns. It is therefore necessary that the Brigade S-4 place a regimental supply officer in command of all the spring wagons of the command, with instructions to keep them as close to the command as the military situation will permit. All the escort wagons of the command will be formed under the command of the other regimental supply officer and marched as directed by the commander of the troops. Radio communication with the escort wagon section of the field trains should always be maintained by the commander of troops. Spring wagons should be as near the command as the situation will permit, and an agent of that column should be maintained with the commander of troops.

The spring wagons of the regimental surgeons and regimental veterinarians should be at the head of the spring wagon column.

The animal drawn elements of the Medical Squadron (except escort wagons), should also be in the spring wagon column. The Medical Squadron will be released by the officer in charge of the spring wagon column when combat is imminent. The motor vehicles

* 2nd Cavalry Brigade, Fort Bliss, Texas, Brigadier General Walter C. Short commanding.

of the Medical Squadron advance by bounds between the escort wagon column and the spring wagon column.

Thus we find that the men and animals are provided for on the march until reaching their bivouac.

Upon reaching bivouac, the spring wagons are released to their organizations by Brigade S-4 and thus men and animals are provided with their evening meal.

Upon arrival of the escort wagons in bivouac they are usually released to organizations, elements of the baggage section going immediately to their squadrons. The ration and forage section, however, immediately distributes to the troop kitchens one complete day's rations, wood and forage, and before unhitching determines from Brigade S-4 when it must go to the Distributing Point to obtain a refill of one day's rations, wood and forage.

The Distributing Point is the place where the field trains will meet the Division Train, which brings the routine daily supply. This point is designated by the Division. The Division Train, when the distance is not great, will often deliver the daily supply at the bivouac of the troops, but sometimes this is impossible, and the field train may have to back track as far as fifteen miles to the Distributing Point. It is apparent, then, that it is necessary that all vehicles, either animal drawn or motor, have always on them one day's rations for men and animals, and one day's gasoline and oil for the motor vehicles.

It must be apparent from the above that all supply personnel must be conversant with what their unit allowances are, and the weights of each, because at the Distributing Point the allowances will be delivered in bulk by an agent of the Brigade S-4 and one may not get his share if he does not know what is coming to him. Regimental Supply Officers and their assistants must be particularly conversant with the allowances or they will not be able to make the regimental distribution. In addition, all organization commanders, mess sergeants and supply sergeants should be able to state what they should receive within the regiment, or they are liable to get left with a short issue.

Army Regulations 30-2210, September 21, 1931, gives the latest allowances in rations, and the "Handbook for Quartermasters" provides a conversion table, but the changes of allowances in this recent Army Regulation must be noted in working this table.

Supplies, other than the daily Class I supplies, are obtained by requisition submitted through Brigade S-4.

It is the usual procedure for the Division Commander to issue an order prescribing the components of the field ration for a ten day period, showing weights of each article of the ration. With the use of a conversion table, it is easy for any one to figure out what is coming to his organization.

The field ration for this problem is announced in attached memorandum, and a simple conversion table therewith. Drawings and issues (assumed) will be made on this ration.

All organization commanders should familiarize themselves with this table and be prepared to tell what articles they should receive on the distribution. Sometimes the tactical situation or the lack of roads will be such that the field trains cannot come up to the troops, and it will be necessary for the spring wagons or even the pack trains to act as a link between field trains and troops.

With our increased fire power, different weapons, armored cars, and gas warfare, the difficulty of ammunition supply is much increased, and the solution of the problem is worthy of much thought.

There are authorized no combat vehicles for the regiment except one in the Machine Gun Troop. The escort wagon is not fast enough to keep up with mounted troops, and the spring wagon has not enough carrying capacity to provide sufficient ammunition—besides it is tied to roads. Therefore a pack train per regiment is the best solution for a sure supply of ammunition. It is believed that the supply in the cargo of the pack train will meet almost any emergency. It is further believed this solution will solve the lack of sufficient personnel in the troops to provide enough ammunition packs with the guns for the great number of machine guns now in the regiment.

Therefore a pack train will be attached to each regiment, and a regimental munitions officer detailed to command the pack train. He will be charged with the duty of keeping it loaded with the prescribed amounts and kinds of ammunition ordered for this form of Regimental Combat train. This combat train is part of the regiment to which attached, is directly under the orders of the regimental commander and will march with the regiment. It will be sent to the ammunition Distributing Point for refill by the Brigade S-4, but will at all other times be part of the Regiment.

The pack trains should be organized in squadron sections, with a bell horse for each section so that a squadron may be detached with its combat train intact.

Until combat is imminent each trooper armed with the rifle carries 90 rounds of rifle ammunition in his belt, and all carry 21 rounds of pistol ammunition. When a serious combat is imminent, 60 rounds of extra ammunition already in cavalry bandoleers are issued from the pack train, and these bandoleers are either carried on the man or are adjusted around the horse's neck. With each air-cooled machine gun there are 1500 rounds of ammunition; with each water-cooled machine gun there are 1500 rounds; with each 37-mm. gun there are 64 rounds. On the pack train before extra ammunition is issued, there are 105 rounds of ammunition per rifle and 21 rounds of pistol ammunition per pistol, as well as 3350 rounds of ammunition per air-cooled machine gun, 3350 rounds of ammunition per water-cooled machine gun, and 112 rounds per 37-mm. gun.

After combat, or during a reorganization, all expended ammunition with combat troops should be replaced from the pack train by orders from the regimental commander, and at an ammunition point designated by him. The amount of ammunition expended will be promptly reported to regimental headquarters by the munitions officer, and the daily strength report to Brigade will show this change. Thus it may be replaced on the next daily supply of Class I supplies. Since the action of cavalry is not so sustained as that of infantry, it is believed that the quantity which can

be carried on the men and with the guns, and on the pack train, is such that there will never be a shortage that cannot be filled at the Distributing Point at the same time as the remainder of Class I supplies.

Therefore, sufficient pack mules from the regimental train to complete the allowance of ammunition expended will be sent to the Distributing Point at such time as may be directed by the Brigade S-4.

Evacuation—Men:

In this reduced peace strength, the regimental surgeon has a very small detachment at his disposal; actually he has with him only a pack animal for first aid purposes. With the spring wagon column he has a spring wagon with additional supplies.

On the march if a man gets sick or is injured, the regimental surgeon gives him first aid, tags him, turns over his horse to his organization and leaves him at the side of the road, with a medical attendant if necessary, and he is picked up by an ambulance from the Medical Squadron, which is following the column for march collection.

When the Regimental Commander issues his combat order, he shows in paragraph 4 where the Regimental Aid station will be located. The location of this station is usually made upon the recommendation of the Regimental Surgeon. If there is sufficient time, and the place is suitable, the Regimental Surgeon may cause his spring wagon with additional supplies to be brought up to the aid station.

When the combat order is published, or upon the request of the surgeon on the staff of the commander of troops, the Medical Squadron is released and, since there is no Collecting Troop active in this command, the ambulances, when possible, must be pushed up to regimental aid stations to collect cases which cannot walk. Cases that can walk, or ride their horses, should be directed by orders from the regimental surgeon to the Collecting Station designated in the Brigade combat order, where they will be picked up by the Medical Squadron.

A collecting station is an establishment operated by the Medical Squadron and is located in the most suitable place in rear of the Brigade, usually near the boundary between regiments. Its location is given in orders. Its function is the reception of casualties from regimental aid stations for their exacuation by the Ambulance Troop to the Hospital Station designated by Division.

Regimental Surgeons will submit requisitions for expended supplies through the Brigade Surgeon, who will consolidate the requisitions. Brigade S-4 then forwards the consolidated requisition to Division, and supply should come forward with next daily supply column.

Evacuation—Animals:

Regimental veterinarians have a spring wagon, and give first aid to animals, evacuating severely injured animals to a collecting station (for animals) conducted by the Veterinary Troop of the Medical Squadron. This Collecting Station is either designated in paragraph 4 of the combat order, or in the administrative order if one is secured. (An administrative order is an order which gives the administrative details incident to carrying out a field order. It usually accompanies the field order to which it pertains.)

In small commands all the administrative data necessary are usually found in paragraph 4 of the field order. In fast moving situations such as concern cavalry commands, the data that would ordinarily appear in administrative order are usually received by dictated orders, or in brief messages issued by the supply officer of the command, who is known as S-4.

Administrative orders cover supply, evacuation, traffic, trains, personnel, and any other miscellaneous administrative details.

In this problem of the 20th all organization Commanders will actually take with them everything that they would take if they were going on extended field service, except rations, forage, wood, and ammunition.

Where forage, rations, wood, or ammunition should be carried either on animals or vehicles, such animals or vehicles will be tagged with the articles and weights.

Regimental and unit commanders must take advantage of this problem to check their units and determine just what should be taken into the field and just how it should be carried.

Regimental Commanders and unit supply officers will have a chance to find out just how much their personnel knows about their allowances, and the supply of the same.

The problem will consist of a march, a deployment for dismounted attack with the regiments abreast, thus permitting the installations for combat to be checked, and a bivouac for the night with distribution of Class I supplies and a refill from a distributing point.

There are enough data attached so that a study along these lines can be made with the minimum of research.

By command of Brigadier General Short:

Verne D. Mudge, 1st Lieut., Cav., (D. O. L.),
Acting Adjutant.

Fort Stotsenburg of Today

By Lieutenant H. Jordan Theis, 26th Cavalry

IN 1902, Fort Stotsenburg, named after Colonel John M. Stotsenburg of the 1st Nebraska Infantry, who fell in action during the capture of Quingua, Bulacan, was established in the upland between the railroad and the Zambales Mountains, eight miles northwest of Angeles, Pampanga. This area was strategically important in the defense plans for the valley of Northern Luzon. At the time it was inhabited by nomadic negritos (Balugas) and ladrones who roamed the wilds unmolested.

Starting on a figurative shoestring of woven cogon grass, symbolic of the dreary, desolate waste, Fort Stotsenburg has grown in twenty-nine years into a veritable paradise of attractive quarters, paved roads, delightful tropical vegetation with its shady foliage, and excellent facilities for every sport, — polo, golf, tennis, swimming, riding, bowling, dancing, hunting, fishing, and camping.

The Stotsenburg Club alone is practically a country club with its many sports augmented by an excellent series of concessions. Its uniqueness rests not only in its comfort and equipment but in that it provides a center for sports, as well as social activities.

The club is well equipped and possesses a large and airy dance floor. Adjoining it is the new officers' swimming pool done in tiles, complete with showers and dressing rooms. Across the street are three excellent tennis courts and a restful shelter house together with number one tee and the eighteenth hole, as well as a practice green. Golf clubs may be kept at the club where they are cared for and minor repairs made for a nominal sum. Caddies for golf and tennis are always available, the charge for eighteen holes being but twenty-five cents gold.

The golf course offers eighteen holes of varied and interesting play over terrain generally rolling and of such scenic beauty as to assist one to forget lost balls and dubbed shots. The greens are of sand, constantly kept dragged by attendants on duty.

Two polo fields are maintained by the club, one of which is on a par with any fields to be found in the Islands. The regiments furnish the mounts and equip-

CAVALRY AREA, FT. STOTSENBURG

ment and usually maintain two or three teams. The fields are adjacent to the Club.

In addition to hops, receptions and tea dances the Club also sponsors paper chases, controlled rides, treasure hunts, picnics, horse shows, and race meets.

For those interested in bowling, two alleys are maintained at Clark Field, and the rainy season does much to popularize this sport.

The majority of the quarters are of wood and plaster board construction with galvanized iron roofs. A few are of concrete, but all are in good condition and most comfortable. All have wide, commodious screened porches in front and at least on one side which can be utilized for sleeping quarters.

In general, field officers' sets have a living room, dining room and three or four bed rooms with two baths. Company officers' quarters have fewer bedrooms and but a single bath, in most cases equipped with a shower only. Bachelors have two room suites with bath in separate bachelor buildings, but at present a great many occupy married sets, two or three being jointly assigned a set.

The usual amount of Quartermaster heavy furniture goes with each set, as well as dry closets for preserving clothes and other goods during the long rainy seasons.

Yet Stotsenburg is an isolated post, reminding one more of Huachuca than any place else, tucked up in the mountains as it is. As such, it offers opportunities for financial retrenchment so necessary if plans for the China trip at least and consequent acquisition of plunder are to materialize.

Perhaps Manila is just far enough away, a little more than two hours by motor. It is, of course, the real shopping center, offering everything to be found in a fair sized American city in addition to curios, rugs, furniture, linens, and embroideries. The Army & Navy Club is the jumping off place for all from the hinterland and as such is of the greatest convenience.

Baguio, a most restful place, is some four hours' drive to the north. In the last few years it has grown into a typical American resort. Camp Hay has been transformed by skilled landscaping combined with its priceless setting high in the pine covered mountains into a veritable paradise. The newly completed Bell Circle Mess and Dormitory outrivals the finest hotels to be found in our southwestern resorts and is a place that instantly fascinates one.

Those given to riding trails will find Stotsenburg a land of endless delight, for it is to be doubted if any other reservation offers such diversity of terrain, such splendor of view and such interesting places. Particularly, rides to the outlying Baluga villages are of interest. These little negrito tribesmen are actually the last vestige of the aboriginal man and are but four to five feet tall, usually dressed in a G-string and armed with bow and arrows. They lead a nomadic existence and may be numbered among the few real curios of the Islands.

The post maintains, thru the courtesy of the 24th Field Artillery, a delightful rest camp all its own high up in the Zambales mountains hard by the base of famed Mt. Pinatubo. Camp Sanchez is on the Artillery's trail to the China Sea sixteen miles from the post proper. A huge lodge furnished with rustic furniture, glassed windows, equipment for cooking, showers that actually afford hot water, veranda, and concrete floors on which to pitch the tents all add to the pleasures and comforts of a delightful stay. From the Camp parties work out to scale Pinatubo and from its misty heights view the gorgeous yellow river winding its course far, far below!

Trails nearer the post are studded with jumps to delight the interested horseman. Their variety is great, and the trails actually take one places.

Nor does one fall off professionally. Here, and here alone, has the conscientious officer an opportunity to observe and study pursuit aviation, mountain artillery, (one battalion of which is motorized) and a defensive cavalry regiment unique in being divisional cavalry organized into two rifle troops, two .30 caliber machine gun troops and one .50 caliber machine gun troop together with a headquarters troop. Pack animals are mules, riding animals horses. The essential elements of all of which would, during an emergency, be motorized with impressed vehicles, while the balance of the regiment with its animals would march as best it might.

Lastly, from an educational standpoint, service at Stotsenburg is inspiring. Contacting Navy people, Coast Artillerymen guarding Manila and Subig Bays, Infantrymen from Manila and McKinley, is not without its broadening aspect. Too, working with native troops and the language difficulty entailed force one to revert to that simplicity from which we are all too prone to deviate in our modern civilization.

When it is realized that the policy existing encourages officers to take advantage of the detached service authorized so as to become better informed on Island affairs and conditions obtaining on other military posts to say nothing of recuperation at Baguio, the stage is set. In addition to ordinary leave which accrues and may be spent in China, Japan, the Malay States or Indo China, a total of one month per year is authorized for detached service together with one month during the tour for the Southern Islands trip and ten days for the venture into Northern Luzon.

But this is written for mounted officers, and the mount is not forgotten. In a country where surra and other deadly diseases are often times rampant, the problem of conserving the animals may well give one pause—and it does. Polluted streams, contact with carabao and other native stock, improper forage which has a harrowing effect by producing that deficiency disease, osteomalacia, among the herds, call for constant watchfulness, experimentation and foresight—all essential in the successful mounted officer. What has been done before may be done again—even in an improved manner.

A welcome awaits you at Stotsenburg,—come, make the good days last!

Military Motor Transport Required by the Army for War

By Lieutenant Colonel Brainerd Taylor, Q. M. C.

Strategical Mobility

MOTOR transport has already revolutionized military strategy because of the greatly increased mobility it has given to armies. In the civil War strategical maneuver depended upon rail or water transport, followed by the slow marches of foot troops and animal transport. Military operations were not only extremely slow and limited, up to and including the Civil War, but the officers who planned and executed them were seriously handicapped, in the eyes of modern strategists, by the halting movements caused by loading, unloading, and reloading in necessary changes from one gauge railroad to another. Eleven different gauges of railways had to be reckoned with in the theatre of operations of the Civil War. Too frequent loading and unloading of supplies, troops and tactical transport upon faster moving rail, water and motor transport, still handicap the military strategist in the theatre of military operations. Standardization of railway gauges, accomplished after the Civil War, materially changed the character of strategical movements in military operations. The effect of railway standardization upon warfare and commerce stimulates speculation as to the further changes that might result from standardization of motor transport and its coordination with standardized rail and water transportation. If standardization of rails physically unified the United States and multiplied its power in commerce and war a hundred-fold, what might not be expected from standardization of motor transport in coordination with our national railway and international water transport systems?

In the World War the general character of motor transport procured for our Army consisted of 274,000 vehicles representing 216 different makes and models. The truck transport consisted of 86,000 vehicles of 1½ to 5½ ton, 4 cylinder, solid-tired types driving on the rear axle only; 57,600 trucks, 2 and 3 ton, 4 cylinder solid tired types driving on front and rear axles, and 21,400 light trucks 1 ton and less, 4 cylinder, pneumatic tired, driving on rear axles only. The practical or average operating radius of our war time motor transport was from 50 to 75 miles per day on good roads, and the average speed of convoys was eight miles per hour, with slowing up and elongation of columns on grades and poor roads. Notwithstanding the difficulties of controlling military traffic on road nets congested by eight miles per hour motor convoys, four miles per hour tanks, two and one-half miles per hour animal-drawn transport and foot troops, the strategical mobility of the Army had taken a great step forward in its new use of motor transport.

In the World War long distance troop and supply movements by truck convoys characterized military operations that a decade before would have had to rely upon railways and long, hard marches. Even in the stationary phases of warfare, that predominated in the World War, motor vehicles passed far beyond the scope of animal-drawn transport and replaced, without doubt, much short haul railway transportation.

Since the World War motor vehicle design and construction and the rapid development of hard surfaced roads have still further advanced the value of motor transport as a means of strategical mobility. The modern truck and bus are powerfully engined with six and a few eight cylindered motors. Solid tires have been replaced by pneumatic tires of great efficiency and durability. The road performances of 4 wheel, 2 wheel drive vehicles which still represent over 98% of the motor vehicles of commerce have increased the potential radius of action of motor transport to 200 and 300 miles per day and more. With modern braking systems and straight, wide, hard-surfaced highways motor vehicles can travel safely at 50 to 60 miles per hour. The average rate of speed that can be developed in convoys made up exclusively of modern trucks and buses may in small convoys be as high as 30 miles, and for large convoys 20 miles, with some slowing up for grades and poor roads but much less elongation of columns. The effect that such motor transport will have upon the strategical mobility of future armies operating in the field is tremendous. It can best be realized by consideration of the present effect of modern motor transport upon commerce, formerly carried on by railways the traffic of which is now so depleted as to constitute one of the most serious of the economic problems puzzling the entire world in this period of business depression. Not only has motor transport replaced all but a small percentage of animal transport in commerce, it has replaced or crippled a great portion of our branch line railway operations and threatens to cut deeply into trunk line railway traffic, and further to jeopardize our arterial railway systems which still form and always will form, the back-bone of our national and international commerce and of our National Defense. In commerce existing railways and a rapidly expanding motor transport constitute an over-capacity in our mechanical means of transportation far in excess of our immediate transportation requirements. Lacking greater demand rails or motors must yield in competition or be coordinated, because of the immutable law of supply and demand.

For strategical movements in any theatre of military operations, modern wheeled motor transport offers the greatest flexibility and therefore freedom of action and the best means of mobility of any form of transport now existing, except under certain military conditions wherein track-laying or animal transport must still be used. With commercial types of motor vehicles, driving on rear axles only, military troop and supply movements may be made in any direction, at high speed, at the rate of 200 to 300 miles per day in areas covered by a net work of good roads. The power of modern wheeled motor transport has been so developed as to eliminate many of the loading and unloading operations necessary in the use of short haul rail transportation. As compared to rail transportation with the time, labor, and cost of truckage or cartage at both ends, motor transportation within certain economical distances, considering time, labor and transportation costs, offers advantages that are too great to be ignored. These advantages, in local fields of general transportation, coupled with the fundamental importance of retaining, unimpaired, trunk-line railroad service, have apparently been ignored by railroad executives or by legislative bodies whose responsibility it is to coordinate the nations transportation system with public convenience and necessity, until now we face a serious transportation situation in which the welfare of other great industries is involved. In this revolution of commercial transportation is to be found the counterpart of the revolution to be expected in military operations.

The existing type of commercial motor transport that best meets strategical requirements, irrespective of questions of maintenance, of sustaining the power of strategical mobility and of general motor transport administrative economy is the commercial bus and truck representing the most quickly available commercial motor transportation. Ninety-eight percent of this type of transportation is not suitable however for tactical use. Its power of mobility cannot be long continued without excessive costs in automotive supply, repair and replacement. Satisfactory maintenance of this type of motor transport, in a prolonged war, especially overseas, will be impossible of accomplishment. In short, motor transport composed of a great diversification of commercial types, makes, and models of vehicles, would ultimately break the back of any major military operation and end in the early immobility of any army that depended upon such a conglomeration of motor transport, for either strategical or tactical mobility. Only a motor transport designed to meet both operating and maintenance requirements can be relied upon to insure the success of any great enterprise that is based upon motor mobility.

Tactical Mobility

World War motor transport had little or no cross-country ability and therefore was not suited to use as a means of tactical mobility. Notwithstanding the fact that G. H. Q. published in orders to the A. E. F. the conception that motor vehicles merely replaced animal drawn vehicles, reliance for tactical mobility still rested upon the animal, except in the case of motor-driven tanks, which moved on the track-laying principle, and a few combat vehicles of the then crude 4-wheel drive type.

At St. Mihiel and in the Argonne the limitation of the horse and mule in relation to time and distance factors, the importance of which are more and more emphasized in modern warfare, began to be apparent. Keeping pace with the development of warfare, experimental development in the use of motor vehicles for organizational equipment has gone steadily on since the World War, stimulated by the lively interest taken by all military powers in the subject of "motorized" and "mechanized forces." The motorization of animal-drawn elements of combat and technical troop organizations is also stimulated by the greatly increased speed and distance abilities of motor vehicles as compared to animals and by the rapidly increasing power of motor vehicles to satisfy military performance requirements as a means of tactical mobility.

Limited by War Department policy to responsibility for the development and procurement of wheeled types of motor vehicles only, the Motor Transport Branch of the Quartermaster Corps has endeavored to increase the cross-country ability of all wheeled types that might be required to produce tactical mobility, without sacrificing the already highly developed road performance required for strategical mobility.

Commercial vehicles driving on one or more rear axles that are used in road building, excavation work, mining and agriculture possess considerable cross-country ability, but commercial multi-wheel vehicles driving on both front and rear axles have developed ability to negotiate sand, mud, steep grades and underbrush, to such an extent as to supplant the animal on terrain heretofore pre-empted by animal drawn transport and to challenge the track-laying tractor in its pet wallows. These types of super-cross-country wheeled vehicles are, however, produced in commerce by comparatively few companies and in very limited numbers. The combined capacity of existing producers of 4 wheel, 4 wheel drive trucks is nowhere near that required to produce the motor vehicles suitable for tactical motor transport required by the Army in the early phases of a major war, but neither is the entire industry prepared to produce in quantities required by the Army any type of truck above 2-ton capacity. Therefore it will be just as expedient for the industry to expand for production of heavier trucks of military types as it will be to expand for the production of the heavier commercial types driving on rear axles only.

Ever since the World War, engineering tests on nearly all the important types, makes and models of commercial trucks have been conducted at the Holabird Quartermaster Depot and models, representing the best of these from a military point of view, have been turned over to the arms and services for extended service tests by their service boards and other field agencies, under the direction and supervision of their chiefs.

The Cavalry, the Coast (Anti-aircraft) and Field Artillery, the Infantry and Air Corps, and the technical services that go to make up divisions, corps and armies, not to mention experimental motorized regiments and mechanized forces, have in the last few years been rapidly developing their military vehicle

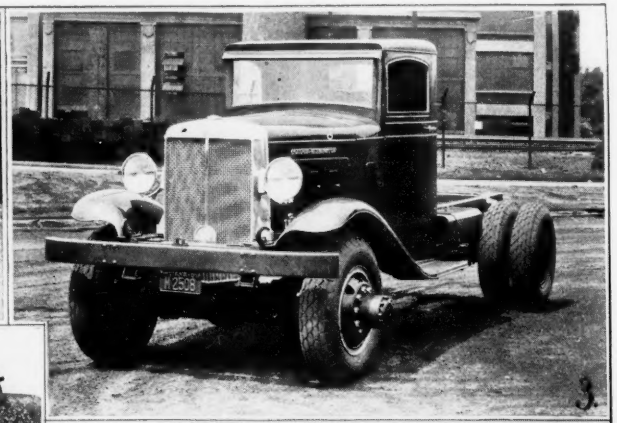


Fig. 1. Group I—1¼-ton, 4-wheel, 4-wheel-drive chassis, standard military type, with Continental water-cooled motor, under cargo body. Chassis and all unit assemblies interchangeable with chassis and unit assemblies in armored car, Fig. 2.

Fig. 2. Group I—1¼-ton, 4-wheel, 4-wheel-drive chassis, standard military type, with Franklin air-cooled motor, under cavalry armored car. Chassis and all unit assemblies interchangeable with chassis and unit assemblies in cargo truck, Fig. 1.

Fig. 3. Group II—2-ton, 4-wheel, 4-wheel drive standardized military type chassis, procured in fiscal year 1931. Principal unit assemblies as named below or interchangeable equivalent sold by any commercial purveyor. Motor: Continental or Hercules Motor Companies. Frame: Parish Pressed Steel Company. Steering gear: Ross Tool and Gear Company. Transmission and clutch: Brown-Lipe Company. Universal joints and propeller shafts: Blood Bros. Radiator: Young Manufacturing Company. Wheels: Budd Wheel Company. Rims: Firestone Steel Products Company. Brakes: Westinghouse Air Brakes. Other parts and accessories from various parts manufacturers. All unit assemblies interchangeable in all vehicles of this group regardless of type of vehicle or maker of parts.

Fig. 4. Group III—3-ton, 4-wheel, 4-wheel drive, standardized military type chassis with cargo body, procured in F. Y. 1932. Principal unit assemblies, as explained in Fig. 3.

Fig. 5. Tactical Mobility: Grade-climbing performance typical of all standard military types—A Group III, 3-ton, 4-wheel, 4-wheel drive, with normal capacity load climbing a 65% grade. Strategical Mobility: Standard Road Performance—Radius, 300-400 miles per day. Maximum speed, 60 M. P. H. Maximum sustained speed, 52 M. P. H.

Fig. 6. Tactical Mobility: Cross-country performance typical of all standard military types. A group I air-cooled or water-cooled engine, 1¼-ton, 4-wheel, 4-wheel-drive chassis plowing through deep mudhole filled with water. Note absence of chains or other cross-country devices.

See article "Military Motor Transport Required by the Army for War."

performance requirements and planning to carry out their own missions and to develop their own motorized and mechanized tactics and technique. In this the Motor Transport Branch of the Quartermaster Corps has endeavored to advise and assist with its greater experience in motor transport operations and maintenance, and through its closer touch with the automotive industry. However, in accord with the Quartermaster General's belief that it is extremely unsafe to interfere or dictate to the arms and services concerning the military characteristics of vehicles required by them, advice only has been offered. Vehicles have actually been developed to meet performance requirements as directed, maintenance requirements only being provided for by Motor Transport Branch plans. Assuming that the military characteristics of vehicles envisioned by chiefs of arms and services are necessary in tactical transport, regardless of differences that may exist between such vehicles commonly used in commerce, the Quartermaster Corps has translated envisioned vehicle characteristics, performance and tactical requirements made known to it, into specifications and drawings from which vehicles of extraordinary cross-country ability have been produced, utilizing standard commercial unit assemblies available in the automotive industry.

Where unusual ratios of rated payload to vehicle weight appear to exist, it is assumed that excess weight, caused by the combination of road and cross-country ability in one vehicle, and its more than ordinary ruggedness, is necessary in designating capacity ratings of military types of vehicles. These differences between military and commercial ratios of vehicle weight to pay load weight are purely fictitious however. There are no commercial standards. The military 1¼-ton for instance is the equivalent in these ratios and in cost of production, to commercial trucks of 1½ to 2-tons capacity, the military 2-ton is the equivalent of commercial trucks of 3 to 4 tons and so on through the military list. On a comparative cost per pound basis of construction and in estimated maintenance costs military types developed at Holabird and produced with equal ease in the industry or at Holabird show up most favorably.

Extended service tests with modern vehicles have been held by the arms and services at such places as Fort Bragg, Fort Riley, Fort George G. Meade, Fort Eustis, Fort Benning, Air Corps fields and other stations where their field agencies are located, and where all kinds of terrain that must be negotiated in combat operations impose collectively the most varied and difficult conditions to be met in tactical motor transportation. These developments and service tests of commercial models of 4 wheel, 2-wheel drive and multi-wheel drive trucks have been reported from time to time to the Quartermaster General by chiefs of arms and services. These reports, accompanied by detailed reports and recommendations of their service boards, have shown performance requirements, mechanical defects and weaknesses developed in unit assemblies of various vehicles, and the failures and successes of the vehicles tested.

These reports and recommendations have clearly shown that standard commercial vehicles driving on rear axles only and used in accordance with commercial ratings do not possess the cross-country ability and sturdiness required for tactical mobility. On the other hand, these reports have shown that multi-wheel drive vehicles driving on front axles, as well as rear, have developed such a high degree of cross-country ability as to make certain that they are a satisfactory mechanical means of tactical mobility in all arms and services. It has also been shown that greater vehicle weights in ratio to rated payload capacity are necessary in tactical or cross-country transportation as opposed to road transportation.

Strategical and Tactical Mobility Combined

In military operations all transport assigned to the arms and services, including the equipment that represents their tactical mobility, must be considered in every strategical road movement involving the transport assigned to divisions, corps and armies and to G. H. Q. reserves. Tactical transport, if it lacks the operating radius or road performance of the motor transport troop and supply columns that make up the mass of strategical movements, will complicate and limit such movements. Slow moving tactical transport, because of its limited road performance, will affect the time element and control of traffic over the road nets, or it will have to be loaded on faster moving rail or motor transport, and unloaded, often at critical points, in the approach to or development of tactical dispositions. In either case time is lost, heavy labor required, and a duplication of transport equipment, in an area already congested, will result in one and the same transportation effort.

All truck chassis of military types recently procured possess a very high degree of tactical mobility and are capable of operation in all modern strategical motor transport movements in accordance with the best road performance of the present day. What is more valuable from a military point of view, they can be easily and economically maintained.

Strategical motor ability is the connecting link between rail and water trunk line transportation and tactical operations. It should be able, if its full military value is to be realized, to extend rail and water trunk lines on the one hand and to develop, without halting, tactical operations on the other hand. In other words, the interruption of movement, due to different vehicle characteristics, that now exists between strategical and tactical transport should and can be removed in military motor transport by "combining standard road performance with maximum cross-country ability" in one and the same vehicle. This all-embracing military characteristic was voiced by the Secretary of War in his first directive to purchase modern motor trucks for tactical training in the Fiscal Year 1930.

Motor vehicles that combine the standard road performance of commercial motor transportation with the maximum cross-country ability required of tactical transport will greatly simplify, economize in and speed up military operations. Provisions of ways and means to procure and successfully maintain the mobility of motor transport that combines tactical and strategical

ability is all that is required. This is the principal objective of the Quartermaster General in his experimental work looking to the development of military types of motor vehicles required in war.

In short his plans contemplate utilizing the engines, radiators, frames, axles, wheels, transmissions, steering and braking systems, universal joints and other unit-assemblies now used in the production of standard commercial vehicles to produce in time of war standard military types. His plans contemplate specifying military performance requirements, and the quality of materials and sturdiness of design that military experimentation and development determine as necessary. In addition his plans seek the maximum interchangeability of unit-assemblies, in vehicles of different types and kinds but similar in size, in order to insure a workable maintenance system under the conditions of war. In this the approval and assistance of the automotive industry, that did its utmost to advise and assist the War Department in meeting the motor transport requirement of the Army in the World War, have been sought. In response to this appeal the Society of Automotive Engineers and the National Automobile Chamber of Commerce have organized committees representing all branches of the automotive industry to consult with the War Department and study military requirements and the plans to meet them. These committees have recently met in Washington and New York, have visited Holabird and inspected a number of military types of vehicles in demonstrations of war time strategical and tactical requirements. Drawings and specifications are being mutely studied by both committees with a view to determining the extent to which coordinating military requirements with the policies and resources of the automotive industry is practicable.

Motor Transport Resources

With the combination of tactical and strategical mobility in view in vehicles procured for the Army in time of war, it is interesting to contemplate the country's resources from which such transportation may be obtained. As a background, we have the following commercial situation:

Commercial truck and bus producers range in character from two or three truck manufacturers, who design and manufacture their own vehicles and most of their own unit assemblies, to truck assemblers who assemble vehicles according to the user's requirements or their own design, utilizing generally in both cases unit assemblies manufactured and sold throughout the automotive industry by so-called parts manufacturers. The ratio of truck manufacturers to assemblers is about 1 to 20 in the United States. The largest and best known truck producers who manufacture, purchase nearly all of the unit assemblies with which they build up a vehicle around their own engines and other units covered by their own patent rights. Many parts manufacturers are as well known today in the automotive industry as the truck producers to whom they sell their products.

Parts manufacturers are recognized specialists in their lines. Their products are known to possess superior qualities. The skilled unit and parts manufacturers form the bed-rock of the automotive industry. From them directly, or purchasing through truck and bus manufacturers and assemblers, the large fleet operator of today can procure any type, model or size of truck his business requires. Through selection of unit assemblies he can dictate the performance and the quality of materials and ruggedness of design best suited to his service. By adhering to dimensional standards in all units that are used to construct or repair his vehicles, he can lay the foundation for maintenance and replacement economies that will prove a major factor in the success of his fleet operations. The coordination of the performance and maintenance requirements of the Army as a fleet operator with the automotive resources which are available are among the most important objectives sought in the very beginning of any war time production of motor vehicles for military purposes.

The manufacturing plants of unit assembly manufacturers can be expanded, and if necessary can change their tooling set-up to meet war time requirements much more easily and rapidly than can truck and bus manufacturers. The unit manufacturer has but one unit plant to expand, whereas the truck manufacturer has many departments of his greater plant, each manufacturing units required to build his special make of vehicle. These being already arranged as to production capacity, location and inter-plant transportation with relation to each other, cannot be expanded as a rule without encroaching upon adjacent departments thereby making it necessary to set up new plants requiring road or rail transportation and this causing delays and disproportionate costs of production.

In procuring motor vehicles, interchangeability of unit assemblies, provided for by specifying dimensional standards, is obviously the key to economical maintenance and to the continuation in use of serviceable vehicle units and parts, representing a material percentage of an original investment, long after vehicles which do not possess the interchangeability feature are scrapped. This road to successful motor transportation, with profitable operations to the user and to the producer alike, is wide open to all fleet operators including the Army. These advantages are recognized and plans are being made to develop them in connection with the procurement of experimental fleets so that the Army may avail itself of the best procurement, operation and maintenance practices that exist at the time when war breaks out. That a major war will sooner or later force the production of motor vehicles which meet military requirements, both as to performance and maintenance, is indicated by the history of military motor transport in the World War. In war time the advantages of combining strategical and tactical mobility in all vehicles intended to operate in the zone of combat, and the solution of the vehicle maintenance problem, which must be viewed as a military necessity, will be the principal motor transport considerations.

For those who are interested in this subject of standardization of military motor transport in which the use of dimensional standards is required of all who furnish war time motor vehicle equipment to the Army,

it would be well to study this problem as it was handled in the War Department during the Punitive Expedition and in the World War.

Brief History of Military Motor Transport Standardization and Procurement

(Quotations from America's Munitions—1917-1918)

Briefly, as far back as 1914 "the Society of Automobile Engineers, having learned from the experience of European nations then at war that motor transportation is one of the most vital factors in the success of any army, offered its services to our War Department for the purpose of making a complete survey of the automotive industry, in the hope that the interests of the industry and of the Army could be coordinated so that in an extreme emergency the industry might be able to provide the necessary motor equipment for the Army, and that the Army might be able to use such equipment in the most efficient manner."

Not until April 28, 1916, did the War Department ask the "Society's cooperation in issuing revised specifications for the purchase of 1½ and 3-ton Army trucks. In May of the same year, a committee consisting of engineers from five companies manufacturing trucks, from five companies assembling trucks, and an engineer from a truck company not making the types of trucks under consideration, was appointed to cooperate with Army officers in making plans to provide our troops with motor vehicles suitable to their needs." ***"This committee went over the Government specifications for the 1½ and 3-ton trucks, which had been proposed by the Army, and after a few changes had been made, the specifications were drawn up for what then seemed to be the ideal trucks for Army use in these two sizes."

"Trucks at this time were urgently needed for our forces along the Mexican border and for the Punitive Expedition entering Mexico." ** "Early in 1917, revised specification for Army trucks were issued as a result of the numerous conferences that had been held between representatives of the War Department and the automobile industry."

"In May standard specifications for the so-called class "A" (1½-ton to 2-ton) and the class "B" (3-ton to 5-ton) motor trucks were established," showing the fundamental requirements of motor trucks for the Army as they were then conceived.

"After deciding on the requisites of an Army truck, the matter of standardization began to receive definite attention, it being the belief of many of the Army officers that it would be entirely possible and practicable so to standardize Army vehicles that but one type of truck would be sufficient for each size, and it became quite evident if this ideal could be worked out, the maintenance of Army vehicles would be a simple matter. Without some standardization, the providing of the proper stock of spare parts became a problem of extreme difficulty."

Not until the early summer of 1917 was actual military automotive engineering systematically undertaken. At this time "an appropriation of $175,000 was set aside by the Quartermaster Department for the purpose of financing the cost of designing and drawing up specifications for a complete new vehicle, which would become a standardized truck for our military forces. On August 1, 1917, there were assembled in Washington fifty automotive engineers, who had been in touch with the truck needs of the Army, and these men, with the help of Army officers, began the task of designing a sample standardized truck, first centering their efforts on the 3-ton size, as this was at that time most urgently needed by the Army. On October 10 of this same year the engineers had finished designing the new type of truck and had completed the first two sample trucks of this type, afterwards known as the "Standardized B'." *** Not until April 1918, was the necessary military automotive engineering completed and actual production begun on the first 10,000 "Standard B" trucks. In the meantime the buying of motor equipment by five different supply agencies continued. "Each corps had its own ideas as to the type of truck required, and the sum of these ideas resulted in a decided lack of standardization for the Army as a whole, and no complete standardization for any corps as a unit." **"Over 200 different makes of motor vehicles were actually in use by the American Expeditionary Forces." **"The buying of motor equipment by so many different agencies of the Government was not only confusing to the manufacturer, who was selling to five different corps, but it also precluded any possibility of real standardization;" and with a view of eliminating these two evils, Special Order 91, W. D. 1918, and General Order 38, W. D. 1918, were issued. The first created a standardization board and the second consolidated the procurement of all motor vehicles in the Motor Transport Service, which service operated under the direction of the Quartermaster General."

"Under these orders the standardization board was charged with selecting and approving the proper types for the use of the Army, the board being composed of representatives from each of the various corps. In this manner the various ideas of the different corps were coordinated through the discussion of the board," and the final result was the selection of chassis, standardized for use. Four different makes of truck chassis of standard commercial design in four different sizes were adopted as standard, in addition to the Light and Heavy Aviation and Standardized B, and their production in large numbers was ordered. Standard A 1½-ton, and "4-wheel drive TT types, called the 'Militor,' this being a special truck tractor designed by the Ordnance Department," were also adopted as standard but never supplied to the Army. It was determined that "on this limited number of chassis could be mounted any bodies required by the Army."

"While the board was standardizing on the types of vehicles to be purchased in the future for the Army, the Motor Transport Service was being formed, and by June 1, 1918, the consolidation of procurement, inspection, production, maintenance, etc., was well under way."

"The Motor Transport Service found that it was impossible to purchase the trucks standardized by the motorization board in sufficient quantities to meet the overseas requirements. It was therefore decided, after the consent of the board had been received, that certain

other types of vehicles should be procured to fill the requirements of the Army until such time as the production of the standardized truck could be increased." Seven makes in five sizes were added.

The following abridged table, made up from a table appearing in pages 502-503 "America's Munitions—1917-18," shows how standardized motor transport was planned and procured for the Army. It also indicates that the War Department can procure from the automotive industry in time of war, just as it did in 1918, vehicles that meet military requirements. In this connection the greatly expanded industrial resources represented by parts manufacturers should be emphasized.

MOTOR TRUCK PRODUCTION 1917-1918

Vehicles Standardized for Overseas Shipment and Production by Several Manufacturers

NAME	*CLASS*	*CAPACITY*	*Number of Manufacturers to Whom Allocated for Production*	*Total Ordered to Nov. 1, 1918*	*Total Completed to Nov. 1 1918*	*Floated Overseas*
Four-wheel, two-wheel drive types:						
G. M. C. Standard Chassis	AA	1-ton	13 different Companies	13,011	5,553	4,001
Light Aviation	A	1½-2 ton	4 " "	3,900	3,210	1,829
Heavy Aviation	B	3-ton	5 " "	3,675	3,099	2,110
"Standard B"	B	3-ton	29 " "	43,005	9,452	7,655
Four-wheel, four-wheel drive types:						
Nash Quad's	TT	2-ton	4 " "	23,684	8,598	7,034
F. W. D.'s	TT	3-ton including winch	4 " "	20,973	7,756	4,748
TOTALS				108,248	37,668	27,377

In reviewing this brief history in the light of experience it should be noted that the causes of failure to provide the Army with satisfactory military types of vehicles required in its military operations were many; chief among these causes were lack of precedents in military motor transportation and failure to comprehend the motor transport problem, in which performance requirements, maintenance and procurement are inseparably bound together in one problem and one solution; failure to accomplish the military automotive engineering involving vehicle development, preparation of specifications and drawings, procurement of pilot model vehicles for engineering tests and pilot model fleets for extended military service tests. It is obvious that all such military automotive engineering should be completed, with a view to revision from time to time to keep up to date, long before war becomes imminent. Finally, peace-time training in the operation and maintenance of military fleets composed of military types of vehicles and the industrial planning required for their war time production are essential to adequate national defense.

Recent Developments

Because of his experience as G-4 of the First Army in France, the present Quartermaster General is in a peculiarly enlightened position to comprehend the relation that the anticipation of motor transport requirements bears to the success of military operations. Under his direction, the following developments have been recently accomplished:

The military automotive engineering (without which the various motor vehicle performance and maintenance requirements of the arms and services cannot be coordinated and interpreted into the motor transport fleet performance and maintenance requirements of the Army) has been brought upto date.

The further military automotive engineering (without which the Army's motor transport fleet performance and maintenance requirements cannot be interpreted for the automotive industry with a view to coordinating military requirements with commercial resources) has been carried to a point that would save the War Department many months of such work and hundreds of thousands of dollars were a war of major magnitude to break out tomorrow.

In this military automotive engineering the basic automotive engineering of commerce has been merely supplemented, not paralleled, just as it had to be in 1917-1918. Standard commercial articles of automotive manufacture have been utilized. Special design has been avoided. The designs of unit assemblies required to produce trucks of military types are strictly commercial, their arrangement in assembling trucks that meet military requirements of performance, sturdiness and interchangeability of unit assemblies is the only automotive engineering attempted.

The drawings and specifications describing military types of trucks from 1¼ to 10 tons military or cross-country capacity, or 2 to 15 tons commercial or smooth road capacity are all outlined and in the case of several types completed in detail.

Experimental models of military types of trucks exemplifying the performance requirements of strategical and tactical mobility combined, in other words trucks that combine "standard road performance with maximum cross-country ability" have been produced, and an experimental fleet of over 300 of these trucks of various types and capacities have been procured and issued to troops.

With this military automotive engineering completed and kept up-to-date from year to year, with changing military requirements on the one hand, and the progress of automotive improvements in vehicle and unit assembly design and construction on the other hand, there should be little doubt regarding the motor transport efficiency of the Army in the event of war. Potentially, so long as the automotive industry of the United

States retains its leadership, the United States Army can be assured of the most powerful military motor transport in the world, provided it procures motor vehicles that combine strategical and tactical mobility, that can be economically maintained, and that are commercially producible, and provided further it develops and practices military motor transportation.

As shown in this article, the standardized military motor equipment recently produced and issued in limited numbers to the Army, chiefly for tactical training, represents seventeen years of military motor transport experiences and development in all arms and services. In the most recent developments history has repeated itself.

In the discussions in the Quartermaster Technical Committee in September 1931, relative to recommending as standard the military types of vehicles experimentally developed, the action in 1918 of the standardization board, composed of representatives from each of the various corps of the Army, (created by Special Order No. 91, W. D. 1918), has been repeated. In the meeting of the Military Motor Transport Advisory Committee of the Society of Automotive Engineers, in the office of the Quartermaster General October 26, 1931, the memorable meeting of such engineers in the War Department on August 1, 1917, has been repeated.

The old solid tired 4 cylindered motor vehicles of limited performance, procured and issued to the Army in the earliest stages of truck transportation, will soon appear to the Army as antiquated and useless as wooden war ships to the Navy. Somewhat as the Navy separates its problems of ship construction and maintenance from the problems of Naval operations, the Army, as a result of its recent development, should be better able to separate its problems of motor vehicle procurement and maintenance from its problems of strategical and tactical motor transport operations.

General References for Collateral Reading

"America's Munitions, 1917-1918", Chapter IV, Report of Benedict Crowell, The Assistant Secretary of War.

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and

"Motor Vehicle Development in the Army Service", by Lieut. Colonel Edgar S. Stayer, Q. M. C. Both articles in The Quartermaster Review January-February 1928.

"A Brief History of Motor Transportation and Statement of Its Functions", by Lieut. Colonel B. F. Miller, F. A., in The Quartermaster Review, November-December 1931.

"Motor Transport in Military Operations", by the author of this article in the S. A. E. Journal, November 1931, published by the Society of Automotive Engineers.

American-Swedish News Exchange Photo

Sweden's Crown Prince inspects Stockholm Troops. Crown Prince Gustaf Adolf, right, with Major General Gösta Lilliehöök watching the Capital's crack regiments pass in review.

The Carden-Loyd Light Amphibious Tank

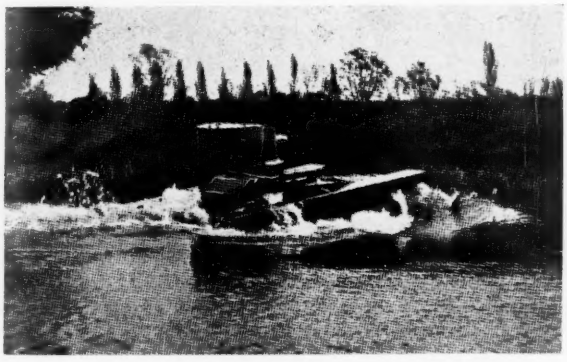
THE effect of the introduction into modern armies of armoured fighting vehicles, both tracked and on wheels, has been revolutionary in its influence upon the application of tactical principles.

In the future tactical localities will be chosen with a special view to the protection which they afford to attack from vehicles of this nature, *e. g.*, tanks and armoured cars.

Of all the natural physical obstacles which it is possible to select for the protection of tactical localities from attack by tanks, none is so effective as deep water, either sea, lake, river or canal. It is for this reason that Vickers-Armstrongs have directed their study to the evolution of the swimming tank.

Their efforts have met with complete success and they now have a vehicle which affords a triumphant solution to the difficult problem of getting an armed and armoured tank across deep water without the use of a bridge or raft, or of any other aid extraneous to the vehicle.

The Carden-Loyd Light Amphibious Tank posesses all the fighting qualities of the very latest type of



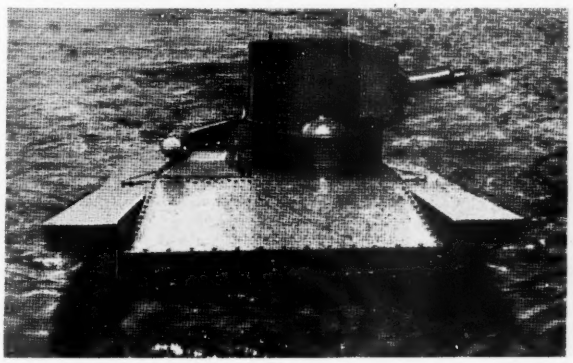
Tank making its exit from the river through mud and reeds.

light tank and in addition is able to cross wide stretches of deep water as easily as it can cross the roughest country .

The above has been made possible by the ingenuity of our tank designers, and now, after several years of research and experiment, we have succeeded in the standardization of tanks of this type, thoroughly proved both as to their cross-country and swimming abilities.

It is not difficult to appreciate the enormous tactical advantages which will accrue to an army containing troops armed with a number of units of these remarkable vehicles. For the establishment of a bridge head at a point where a crossing by a large force of all arms is contemplated, they will be invaluable.

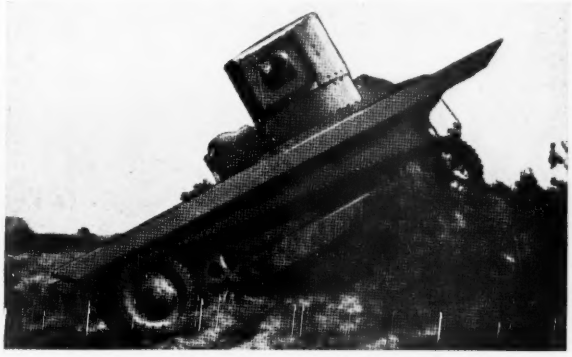
Should a Commander desire to make a wide strategical turning movement against an enemy, who is relying on a water line for protection, he will be enabled, by forming a flying column consisting of a



Tank proceeding upstream against both wind and current at a water speed of some 6 m.p.h.

number of these vehicles, to strike from whatever direction he pleases at the flanks of his enemy, and will thus be in a position to disorganize, completely, both his strategical dispositions and his administrative arrangements.

But little imagination is required to appreciate the decisive effect which the presence of amphibious tanks would have on operations involving disembarkation on a hostile beach. The story of the heroic but costly landings carried out by British troops in the Gallipoli Peninsula would certainly be different had they been provided with amphibious tanks capable of entering the water direct from the ships and swimming straight to the shore. In such a case a Commander disposing of armoured vehicles, armed with machine guns, in which advanced troops could be thrown ashore ahead of the main body, would be able to establish safe landing places, free at any



Amphibious Tank negotiating very rough country.

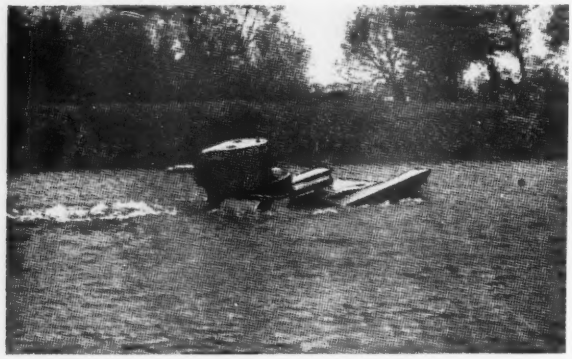
From the Royal Tank Corps Journal (British) December, 1931

rate from the machine gun fire of the defense, before the principal landing operations begin.

The illustrations, which give a good general idea, of the tank and its capabilities, do not enable us to show fully its agility, its speed, both on land and in the water, nor its remarkable cross-country performance.

A cinematograph film showing the performance of the vehicle across country and swimming in the River Thames can be seen at Vickers House, Broadway, London, S.W.1.

Besides its remarkable amphibious qualities, the



Tank leaving the water where the bank is steep.

Carden-Loyd Amphibious Tank has a maximum road speed of 40 m.p.h. It is able to climb a continuous slope of 30 degrees at a speed of about 6 m.p.h. when fully loaded with two men, machine gun and 2,500 rounds of ammunition.

In the case of short slopes, the tank can easily surmount 45 degrees. It is just as handy as any of the other tracked vehicles supplied by Vickers- Armstrongs and has a turning circle of only 22 ft. The armour protection consists of 9 mm. C.T.A. bullet-proof plate on the vertical front plates, this thickness of plate being proof against rifle calibre ammunition at point blank range and against armour piercing ammunition at a range of 150 metres, under the most unfavourable conditions, i. e., at normal impact. The bullet-proof plate on the sides and back is 7 mm. thick and is proof against rifle calibre ammunitions at point blank range and armour piercing R. C. ammunition at a range of 250 metres.

It may be said without any exaggeration that the vehicle described and illustrated in these pages is unique and without its equal in the world. Its remarkable performance must be seen to be fully appreciated.

Tanks of this design are now available at the Tank and Tractor Design and Experimental Station of Vickers-Armstrongs at Chertsey, only a short distance from London, where they can be demonstrated to intending purchasers both across country and in the water.

A short resume of the weights and other data is given below.

Weight	2 tons 15 cwt.	approx.
Width	6 ft. 10 ins.	”
Length	13 ft.	”
Height	6 ft.	”
Road Speed	40 m.p.h.	”
Water Speed	6 m.p.h.	”
Ditch crossing	5 ft.	”
Obstacle, vertical	1 ft. 8 ins.	”
Climb, angle	30° continuous, 45° short slopes.	
Turning circle	22 ft.	
Thickness of bullet-proof plate:		
Side and back plates	7 mm. C.T.A.	
Front vertical plates	9 mm. C.T.A.	

Active Duty Reserve Training at Oglethorpe

By Guy C. Hamilton, Jr. 2nd Lieutenant, 309th Cavalry

A "BRUSH-UP" on cavalry tactics which slip from memory during the years of civilian life, mounted work, to regain the "feel" of a horse and the spirit of the horseman and enough problems to afford a conception of modern cavalry problems were furnished nearly forty reserve officers of the 309th Cavalry Regiment last summer during their annual two weeks training period at Fort Oglethorpe, Ga.

Primarily, the work consisted in riding throughout the full hours of each morning, so that these men of the reserve would be familiar with the first principles of equitation and would be able to handle their mounts creditably in case of national emergency, both on the equitation field and in the much more arduous exercise of campaign work. With few exceptions officers, long unused to the saddle, quickly picked up their old habits and after a couple of days of sore muscles were soon riding creditably through the regulation sabre course, taking hurdles smoothly and sending .45 bullets accurately through the targets past which they rode on the mounted pistol course.

A majority of those present were younger men, R. O. T. C. graduates from universities. Old cavalrymen, however, who had seen more serious work with the regulars during war days, were also on hand to keep abreast of ever-changing military regulations and to spend their vacations with the service.

With three reserve majors present, the group was well supplied with officers to lead various squads. Major John C. Carter of Columbus, Ga., was designated as leader of the group during the two weeks of the camp, and Captain Herman Rathjen, D. O. L., regular army instructor of the 309th regiment, acted as supervisor of the entire training program.

As the training period might be considered typical of that furnished all reserve officers throughout the country, an idea of its nature may not be amiss.

The 309th draws its personnel from a large territory, and officers assembled at the barracks which were their headquarters from a radius of many hundred miles on the Sunday of July 26. The great distance which many of them, living in southern Florida, were forced to travel, resulted in the termination of the camp a day earlier so that they might return to their work in time.

A full day was spent on the day after assemblage, while Medical Corps physicians gave thorough examinations to the group and approved them for the strenuous cavalry life. All but two of the number were found satisfactory and were allowed to proceed with field work.

The second day started with a rush, as it was realized that only a limited time was allowed for all sorts of training. The officers, divided into three squads previously, took turns at the equitation ring, were given a taste of dummy pistol work on the mounted range and were initiated again into the mysteries of the sabre course. Sabres felt a bit awkward, the shock of the blade's contact with the dummies was strange at first, but after one or two runs the old swing of things began to return. When record was run, nearly every one qualified in one of the three grades for this course. With shirts dripping wet, and muscles aching more than a little, the group returned to barracks that first morning, to throw themselves gratefully on their bunks before a quick clean up and the dinner that followed. There was one thing about the workout; appetites were on edge, and the steaming platters of meat and vegetables and the big lemonade pitchers moved with the speed of lightning up and down the tables. A brief rest afterwards, then it was off to the field again, but this time by motor car to the dismounted pistol range. Firing was done throughout the afternoon to accustom the men to the kick of an army Colt again. As the shooting continued, the ability to send bullets through the bull's eye increased and the practice was considered a good preliminary to later mounted firing. While some, tired, wrote letters and went to sleep early that night, others more determined to enjoy every minute of the camp, jumped into automobiles after supper and shot off in the direction of Chattanooga, Tenn., seven miles away. The city, with Lookout and Signal Mountains, proved a center of attraction during the two weeks and afforded social engagements to a number of those at camp.

Regardless of how late it plays at night, the army turns out early each morning. At about 5:30 men rolled from their beds up and down the long barracks hall they occupied, shook their heads sleepily at first, then industriously reached for their boot hooks and prepared for another day.

While the first day of active work proved hard to unaccustomed muscles, later ones were less so. As morning after morning passed and riding continued, the reserve men quickly swung into their old cavalry stride.

Sabre practice and mounted pistol work occupied much of the time so that the officers might be proficient in these two weapons by which cavalrymen have established reputations as fighters on thousands of battlefields. But there was equitation and plenty of it, riding over jumps, cross country riding and mounted drill, with various officers acting as leaders. Captain Rathjen and the higher officers were constantly ready to give instructions.

The Sixth Cavalry, long established at Fort Oglethorpe, was invaluable in its demonstrations of pres-

ent tactics which have been introduced into the service. During the stay of the reserve group, the regiment passed in review before its old commanding officer, Colonel Humphrey, who was leaving soon after to take up his new duties as Chief of Staff of the First Cavalry Division.

Taking advantage of their presence in the field, the outfit, which is now at peace time strength, devolved into a war strength troop, and stretching in a long column up and down the long length of Snodgrass field, Chickamauga Park, it maneuvered in that formation under the commanding officer of Troop B, Capt. Raymond Gibbs. Taking the occasion of a passing aeroplane to demonstrate the maneuver, the commanding officer had his war strength outfit break up into small groups, take shelter and hastily reassemble later to show how the cavalry would act if attacked by a fast pursuit plane in modern warfare.

Besides seeing the Sixth Cavalry pass in review, the 309th officers also saw the 109th National Guard Regiment, a cavalry outfit drawn from Tennessee and North Carolina, pass reviewing officers on the occasion of the presentation of a peace time medal to one of their members.

A cavalry officer must not only be able to ride and shoot. He is a leader primarily, and as such must be able to handle his unit with common sense and experience in maneuvers. Cavalry, known as the "eyes and ears" of the army, must be able to do constant advance and rear guard work during advances and retreat, to patrol and scout out hostile territory and to serve as a protecting mask for encamped units. Problems dealing with these functions were presented to the officers on afternoons throughout the camp. Reserve majors and captains were required to work out solutions to their own problems, and lieutenants theoretically commanding smaller units were given orders by these men and required to plan the positions of their own forces. The entire group rode in cars over Chickamauga National Park, while problem leaders, with their maps, moved from point to point, gave their orders for formations, disposed their forces and then executed their orders in theory. At the conclusion of each problem the regimental instructor gave a criticism of its handling, corrected errors and allowed questions to be asked. During the solving of the problems he interjected questions, advice and criticism. In this way a clearer conception of the makeup and functions of "points," "advance guards," "reserves" and the like was afforded, and a better glimpse given of how a cavalry force must be conducted afield when each group has a certain number of men, certain weapons and nothing more. The cavalry leader's problems not only in combat, but in caring for his men, his animals, his weapons and his supplies became more clearly evident.

Fort Oglethorpe is fortunately located at Chickamauga National Park, a wide sweep of beautiful country where fields alternate with open woodland and where one of the major battles of the Civil War was fought. Such a terrain was ideal for cavalry maneuvers.

The last day of active work at camp included a ride of nearly twenty miles to the post rifle range, so that the group could be familiar with the cavalry manner of marching. The return march was made after nightfall, with the column presenting a succession of tall black figures as it trotted swiftly along in the darkness, sparks flashing brightly from the horses' hooves.

Camp was brought to an end after a tour of the Chickamauga battlefield and an explanation of the battle by Lt. Col. Oscar Foley, Chief of Staff of the 63d Cavalry Division. Colonel Foley and Captain Herbert Scanlon, adjutant of the 63d Cavalry Division, had previously been honor guests at a dinner given by the reserve officers in their barracks dining rooms.

Camp unfortunately ended just as legs were becoming used to the saddle and as the methods of cavalry work were becoming more and more firmly established in mind. But those at camp undoubtedly returned in better physical shape, newly inoculated with the cavalry way of soldiering and with a better conception of the cavalry's functions and of their own responsibilities as leaders of men in time of emergency.

Events Overseas

By Lieut. Col. Herman Beukema, Professor, U. S. Military Academy

The Basle Report

WITHOUT a restoration of confidence there can be no return to world economic stability; without a prompt readjustment of German reparations, based on a common accord of all the powers affected, there can be no confidence. Such, in sum, are the conclusions of the advisory experts of the Bank for International Settlements, published at Basle December 24. The committee did not limit its investigations to the reparations question, when it announced that the governments involved "will have to take account of many matters which can be solved only in conformity with economic realities." Prominent among these "many matters" is the linking of war debts to reparations, and the discovery that Germany's favorable trade balance in the past eighteen months is seriously menaced by foreign tariffs, exchange control measures, and other restrictions against the free interchange of goods. A plea, in closing, for the elimination of political considerations. In order that the problem may be settled "on its merits" emphasizes the fact that the question has been treated in this instance from the standpoint of economic realism.

The committee declared bluntly that Germany's resumption of conditional payments under the Young Plan at the expiration of the Hoover moratorium in July is impossible. By implication, the same conclusion appears as to the unconditional payments, although the terms of that Plan act as a bar to the committee's consideration of those payments. Moreover, no future date is set for the resumption of full payments.

Foreign analysis and interpretation of the report showed the interested capitals far apart, both as to present conclusions and as to modus operandi for the future. Berlin purported to see the Young Plan "torn up by its roots," while grieving over the absence of any recommendations for the final burial of reparations. But it chose to regard that long-standing objective as appreciably nearer attainment. Paris and London saw primarily the need of prompt action. On the call of Premier MacDonald a conference of interested Powers was called for January 20. The representatives will gather at Lausanne almost two years to a day after the assembly of experts whose deliberations led to the ultimate acceptance of the Young Plan.

The British Empire

United Kingdom. England enters the new year with greater hopes than were justified a twelve-month back. The retrenchment and taxation policies of the Nationalist Cabinet apparently indicate a balanced budget; the protective tariff gives the British producer an excellent opportunity to develop the home market; textile manufacturers are enjoying a greater activity than at any time since 1920; and stabilization of the pound at a depreciated level is at least in prospect. Parliament stands adjourned until February 2.

In his inaugural speech before Commons on November 3, Mr. MacDonald's conception of his duties under his "doctor's mandate" were announced. Briefly, he intends to keep the budget in balance, restore the balance of foreign trade, and resist price and currency inflation. His program includes a readjustment of war-debts and reparations, acceptance of the proposed Dominions economic conference at Ottawa next July, anti-dumping legislation pending passage of a protective tariff, and approval of the Hoover-Laval efforts to promote a Franco-German accord.

In spite of sniping from die-hards, the government has recorded impressive achievements between Parliament's opening and its Christmas recess.

On November sixteenth, Parliament passed an "Abnormal Imports Act" which gives the Board of Trade authority for six months to levy ad valorem import duties up to 100 per cent on manufactured goods from abroad, excluding the Dominions.

Dominions may export to England, duty free, goods of 25 per cent or more empire content. Application began November 25, with 50 per cent duties on imports, bulking annually $220,000,000. America is affected to the extent of about $12,000,000. The Continent suffers more heavily.

This act is skillfully drawn. While accomplishing its primary purpose, it avoids the counter-vailing provisions of the American tariff, does the least possible injury to Britain's debtors, and maneuvers France into an indefensible position in tariff warfare. The friendly gesture to the Dominions, bolstered by a wheat import quota proposal to give them a 55 per cent monopoly, places Britain in an excellent position for the Ottawa conference.

Continental countries, and France in particular, have voiced no little irritation. At the same time, they have sought to make individual arrangements, but without success. France, Canada, and South Africa have made reprisals, using exchange disparity as an excuse.

Liquidation in substantial amount of the credits extended her by the Federal Reserve system last August has been accomplished in the face of a declining sterling value and a shrinking bank reserve.

Impetus given industry by currency depreciation, and the Chinese boycott of Japanese textiles has resulted in maintaining a steady decrease in unemployment figures at a season when the normal trend is otherwise. The elimination of about 70,000 married women from the benefit roster has diluted the real effect, but has not invalidated it. Textile mill owners, once again approaching full productive basis, retreated precipitately before labor resentment at their endeavor to abolish

the forty-eight hour week. Abandonment of the huge new £6,000,000 Cunarder, however, caused frank dismay. Three thousand men were thrown out of work, and a gallant effort to recapture the mythical "crown of the Atlantic" was nullified.

Junking of the R-100 closes the book on England's major lighter-than-air activities. Increased mobility, closer cooperation between tanks and other troops, and refinement of counter battery in meeting engagements has characterized recent military training.

India. Mr. MacDonald's statesmanship has always been placed in its best light by Indian affairs. Although the conference which adjourned December 1, was a failure, the Prime Minister found no difficulty in placing upon India the responsiility for such affairs, while at the same time having his Indian program acclaimed by an overwhelming vote in a Tory House of Commons.

Gandhi's return to India was the signal for a resumption of the civil disobedience campaign. As a matter of fact, violent disorders had broken out in many sections while he was still some distance at sea. Every element of discord,—Nationalist, Communist, and "Red Shirt"—was involved. But it was left to the eternal enmity existing between Moslem and Hindu to produce the most sanguinary troubles. For once the British Government in India was prepared to counter disorder with stern repression. Gandhi hastily asked for a conference with the viceroy, Lord Willingdon, as to the measures which the government would take. His oft-repeated declaration that "a million Indian lives is not too great a price to pay for liberty" left no further ground for compromise. Gandhi and the Nationalist leaders were clapped into jail, and everywhere, as the new year opened, the population and the government prepared for what threatens to become one of the most serious phases of India's struggle for independence.

R. B. Ransom, *Captain, Infantry.*

Western Europe

League of Nations. With China continuing to lodge protests and Japan steadily advancing its occupation of Manchuria, the League has passed i's problem for the time being to a commission of investigation, headed by a British subject, Lord Lytton, and including Major General Frank McCoy (U. S.) All members of the commission have had more or less experience in the Orient. The many difficulties involved preclude the presentation of a report for many weeks. Positive action by the League during the period of investigation is not to be expected, barring unforseen developments between the two principals to the imbroglio.

For the present, then, the League will shift its major attention to a matter of wider international import, the long-heralded Disarmament Conference to be held at Geneva. Anticipated by international gestures of goodwill such as the one-year truce in naval construction, everything possible has been done to blunt the many acute angles facing the diplomats. But the angles remain. Shall the basic formula preface disarmament with security, as France insists, or is there sufficient safety in reversing the order of those elements? And what is to be the yardstick of defense—rifle or dollar? Then again, is a soldier on a reserve status to count as a defense unit, and if so, to what extent? Finally, what weight is to be given to a nation's potential war strength, measured in terms of population, industrial plant, wealth? It will require yet another "honest broker" to find a compromise which will resolve all these angles into a circle of harmony. France has already enunciated a solution in the creation of a super-international police, able and ready to act instantly against any aggressor state. In short, it is once again the League "with teeth," first advanced at the Versailles Peace Conference, and there emphatically rejected.

Organization of the Conference contemplates the naming of five commissions, plus a steering committee. The political issues involved are deemed of sufficient weight to be entrusted to the General Conference Committee, the most important of the commissions. The other four will be concerned with army, navy, aviation, and budgetary matters, respectively.

The League is planning to present to the world a new independent nation early in 1932. Irak, administered under British tutelage for ten years, is now thought to be capable of governing itself. Great Britain has asked to be discharged from its responsibilities under the League's mandate, and the Council's proclamation of independence for the Arab state is expected to follow in logical sequence.

France. The reaction of the French press to the stand taken by the American Congress in setting itself squarely against further reduction of the war debt has been characterized by greater acerbity than has appeared in many months. Several editors seize on the clause in the French accord which gives France the option of declaring at any time a three-year moratorium of her debt. Leon Bailby poses the question,—"If the settlements due next February on German private debts are not satisfactorily arranged, and if on June 1, 1932, Germany does not pick up the reparation payments due to us, have we not the right to notify America that we will declare a moratorium of our inter-allied debts?"

Further evidence that France is feeling more and more the world-wide depression was given in the publication of the trade figures for the first ten months of 1931, showing an import surplus of $413,000,000. That figure is materially higher than for the similar period of 1930. Unemployment totals, though appreciably below those of neighboring states, are mounting at an increasing rate. To meet the situation, Premier Laval has worked out a program for construction of public works, mechanization of agriculture, education, and sundry other purposes. Expenditures will approximate $120,000,000. Such measures do little to allay the resentment of the French electorate against the depression, and the party in power is being made the butt of wide-spread criticism. However, the approach of parliamentary elections works to prevent any effort to overthrow the Laval government.

Contracts have been signed for the construction of

four defensive works on the Italian frontier. They are to be located in the region of Menton, Sospel, in the valley of the Vesubie, and near Lantosque. The total cost will be approximately $2,500,000.

Spain. The President of republican Spain may declare war only in accordance with the rules and decisions of the League of Nations. Thus did the recently adopted Spanish Constitution limit the war-making powers of the President. In addition, armed conflict must be purely defensive, and all disputes which involve danger of war must first be submitted to the League for arbitration. No other nation has voluntarily so limited its war-making power.

Other novel features characterize the new constitution. There is to be one legislative chamber, or Cortes, of 440 members, to be elected by universal suffrage of all citizens over 23. A single term is limited to five years, but the Cortes may be dissolved earlier by the premier. Such action must be followed by the calling of a new election.

The president will serve for a six-year term and is ineligible for re-election. Indicative of the present attitude toward the church is the clause barring the priesthood from eligibility to this high office. The president will be elected by the members of the Cortes and an equal number of electors chosen by the people, a method which combines French and American procedure. His salary and allowances are 1,500,000 pesetas ($125,000 current exchange rates) annually, making him the best paid governmental executive in the world. The parliamentary system will be in effect, with the premier representing the majority party or coalition. He may be voted out of office at any time by the Chamber, a provision which may make his official life short-lived, as no party is likely to have a clean cut majority.

The age-old demand for Catalonian self-government is met by granting Catalonia and the Basque provinces certain autonomous powers within the republic. The government may nationalize property and essential industries if the need arises, a provision directed against vested religious orders. Religious freedom is achieved for the first time in Spanish history by abolishing the status of the Catholic church as a state church.

Niceto Alcala Zamora was elected first president and assumed office on December 11. He called on Manuel Anzana to form a cabinet, and a coalition government was formed which will rely for support on the Socialist, Radical Socialist, Republican, Action, Gallegan and Catalan parties. Opposition parties will include the Conservatives, Progressives, Federalists, Agrarians, and a number of smaller factions.

The first decrees signed by President Zamora after taking office was a tariff declaration under which fourteen classes of imports are affected. The duties on these articles are raised to unsurmountable heights, an action clearly reflective of the world-wide movement toward prohibitive trade barriers. Automobiles and telephone equipment are the American items of export hardest hit.

D. A. Fay, *1st Lieut., Inf.*

Central Europe

Germany. The German temperament is apparently adjusting itself to the nation's chronic disease,—trouble. A Continental cartoonist aptly expresses foreign opinion in picturing Chancellor Bruening and President Hindenburg sitting on the lid of a madly boiling kettle. To Bruening's query as to why the lid does not blow off, Hindenburg replies "Perhaps the kettle isn't boiling after all." However, difficulties are not wanting. The rising Hitler tide, the presidential election scheduled for April, the steady fall in tax receipts, the continued flight of capital, and growing unemployment combine to create doubts as to Germany's future. For the present German interest is focused on the remedies to be considered in the Lausanne conference on international debts.

The National Economic Council composed of leading industrialists, bankers, and representatives of labor, called by President Von Hindenburg to lead Germany out of her economic mire has failed to produce results. Whatever good might have come from it disappeared when representatives of labor deserted the conference, asserting that German labor would not accept any recommendations that the council might make.

Hitler has made a bid for popularity outside of Germany by announcing that, though reparations must be abolished, his party will respect the private debts which Germany owes. Meanwhile, Hitler continues his attack against the present German government. Emergency governmental decrees have deprived him of freedom of the press and radio, and Bruening threatens more drastic action if the belligerent Nazis contemplate the use of force. On November 15 in Hesse, Hitler scored his latest triumph by winning a majority of the seats in the Hessian Diet, thereby displacing a coalition of Socialists, Centrists, and Democrats who have controlled the Diet since 1919.

The latest crop of Bruening decrees are tantamount to economic martial law. In many respects they furnish a parallel to the state socialism of Soviet Russia. Such decrees, voluminous in quantity, cover a multitude of subjects ranging from the fixing of commodity prices and wages to the regulation of physician's fees. That they are accepted at all is due to the realization by the populace that a Hitler or a Communist government would march down the same road, and still further.

Italy. Hard-pressed to make national income balance the outgo, Italy still finds the funds for the development and strengthening of its defenses. The most forward-looking project of recent years, compulsory pre-military training of the nation's youth, involves a program of such courses for 1,200,000 youths in 1932. It will provide a great reservoir of personnel well-grounded in the fundamentals of discipline and simple military exercises, requiring comparatively little further training in the event of an emergency to prepare these boys for combat duty. Of interest, in view of the approaching Disarmament Conference, is the completion in organization of the "Wing of the Aegean Islands," stationed at Lero (Dodekanese). It comprises a sea-plane pursuit squadron, two sea-plane bombard-

ment squadrons, and one sea-plane reconnaissance squadron. Italy's total air-forces are stepped up for 1932 to a total of 22,126, an increase over the previous year of 161 officers and 84 men.

The seventh and last 10,000-ton cruiser authorized in the program, which was formulated after the Washington Disarmament Conference in 1921, is the cruiser Pola, recently launched at Leghorn.

Both the immediate and the more distant objectives of the recent visit of Dino Grandi to Washington remain obscure insofar as any statements are forthcoming from either Rome or Washington. Following hard on the heels of the Local mission's trip to our capital, it set tongues a-wagging on both sides of the Atlantic. Grandi vigorously denied any desire to ask a loan for Italy. In general terms he admitted that international peace and comity were uppermost in his mind. Whatever the mission and its results, Fascism gave its emissary royal welcome on his return to Rome.

Grandi's stand on three matters of international interest helps to clarify Italy's probable position in forthcoming conferences. In brief, as to treaty settlements, he declares that not only the "ideas," but the "interests hitherto predominant are now undergoing revision." Again, he places disarmament as the indispensable prelude to security. Finally, he insists that reparations and war debts are one and inseparable. Italy is thus diametrically opposed to France as to treaties and disarmament. On the question of war debts, she accepts the thesis adopted by France and refused by America.

O. L. Nelson, *1st Lieut., Infantry.*

The Balkans and the Near East

Yugo-Slav elections early in November are said to favor the government and its plan for a unified kingdom. At the same time, voting was light, and the opposition contends that the royal manifesto of September has been utterly ineffective in ending the dictatorship, which (they say) continues under constitutional forms. International significance is seen in the visit of King Alexander to Paris, made ostensibly for a medical consultation. The newspapers suggest that His Majesty seeks money as well as medicine, and that the visit may strengthen the association of France with the Little Entente Powers to maintain the post-bellum settlement.

At the same time, the association of Hungary with the Entente is hinted in a conference of Count Bethlen, former premier, with King Carol of Rumania.

Mr. Grandi's visit to the United States was made the occasion of a protest by Greek Americans against the Italian retention of the Dodecanese Islands, held by Turkey until 1912. Oppressive measures of Italization and the fortification of the islands is charged. Meanwhile, permission for expatriated Greeks to visit their old homes and the return of certain relics may indicate an easing of Greco-Turkish relations.

J. F. Fiske, *2d Lieut., Field Artillery.*

Eastern Europe

Russia. The Russian Bear hibernates. The reversion to instinct apparently promises a winter of relative quiet in the land of Soviets, the first since the Bolshevik revolution. Conditions which permit (or compel) hibernation inevitably raise the question as to what may be expected when the bear emerges. Will it come forth emaciated and weak, or, on the contrary, will its appearance display to the world a Russia better able to cope with the serious and growing difficulties which beset it? Typical of Russia, the signs point to both conclusions.

On the favorable side is a wheat harvest which in quantity, if not quality, falls little short of expectations. In line with Stalin's program for raising the standard of living, an increased proportion of the wheat is to be turned into domestic channels. The same policy will obtain in disposing of all classes of manufactured goods classed as immediate necessities. But we must turn to the diplomatic field to find the reasons for Moscow's greatest satisfaction. Rapprochement, in one form or another, has drawn her more closely to Italy and Germany on the one hand, to France and Poland, on the other. The Nazi press in Germany sees Russia, at no far distant time, holding the balance of power in Europe, and even now smoothing the diplomatic channels to that end.

The gloomy side of the picture is found in the major difficulties which are being met in financing the national industrial program: the lack of skilled workmen, excessive and rapid deterioration of tools and equipment; unfavorably distributed natural resources, coupled with a transportation system which persistently falls far short of meeting requirements.

Dismissing some of the doubts which have been voiced abroad, the Supreme Economic Council has announced the conclusion of the Five-Year Plan by the end of 1932. In that event, the original plan will have been anticipated by nine months. However, some of the doubts will not down. Russian figures indicate that the scheduled program of the past year fell seriously short of its goal in many important lines, notably mining, transportation, and production of steel and iron. Moreover, an adverse trade balance grew steadily worse in recent months. As a result foreign exporters grew so fearful of Moscow's ability to meet her obligations that they discounted their Russian paper by as much as 40 per cent. In brief Russian credit has gone from bad to worse. In the face of such obstacles, Moscow writes across the face of 1932 the inscription "Shturmovoi,—the year of storming over the top."

Of military interest is the attention given to aerial development. Russia now has 1654 military planes of all types, including 580 bombers, 550 observation, 447 pursuit, and 77 attack planes. There are in addition 250 commercial planes, easily convertible into bombers. Fourteen airplane factories are now in existence, boasting a peacetime capacity of 100 planes per month, a figure scheduled to be stepped up to 250 in time of war.

G. M. Badger, *1st Lieut., C. A. C.*

BOOK REVIEWS

LEONARD WOOD. By Herman Hagedorn. Two volumes. 960 pages. Harper and Brothers. $10.

Mr. Hagedorn has written a great book about a great man, a book of peculiar interest to the Army about one of its most remarkable characters, Leonard Wood!—Captain-Doctor promoted General—who made good at every job to which he was assigned and who at the same time ran contrary to all "adopted policies" and brought down upon himself, at one time or another, the bitter animosity of all of his superiors, up to and including the President of the United States.

Mr. Hagedorn had access to General Wood's diary, the records of his voluminous personal correspondence, and manuscripts furnished by those most intimately associated with him throughout his long career. An exhaustive search was made of contemporaneous newspapers and magazines, of public records and of private correspondence between third parties in which General Wood was mentioned.

The author brings into sharp contrast two opposite types, Pershing, who always concerned himself with his own affairs, and Wood, who never freed himself from concern about the affairs of others—that is to say, who was a reformer. He portrays Pershing as a man who followed the strict line of the duty assigned to him, and Wood as a man who was restive when things went wrong and who tried to remedy them whether they pertained to himself, to his subordinates, or to his superiors. He indicates that, in the last analysis, one got the breaks and the other did not—that Baker, a civilian and a pacifist, selected Pershing to command the armies of the United States; that Penrose, a machine politician, prevented Wood from becoming President of the United States

It seems a pity that he should have attacked the reputation of so many other eminent Americans in defending the reputation of General Wood. He assumes that General Wood was always right and that the others were always wrong. As a matter of fact, some of the things for which General Wood contended have subsequently proven to be fallacious. It could hardly be otherwise. To err is human, and above all things General Wood was intensely human.

He points out the mutual admiration between Wood and Pershing but impugns Pershing's motives and leaves the reader in doubt as to who was responsible for Wood's not going to France—Pershing, March, Baker, or Wilson. He shows that Wood's strongest Army allies, before and after the war, were Pershing's intimate staff officers during the war, but he does not reconcile these differences. The truth is that while a man cannot ride two horses at the same time, he can ride first one and then the other without disparagement to either.

He has shown that General Wood was the storm center of controversy but has failed to show that General Wood, himself, was rarely a party to this controversy. He has shown that many men hated Wood but has not shown that Wood hated no man. To his intimates General Wood's most striking characteristics was his kindly, genial disposition. Whatever he may have written in his diary, neither he nor Mrs. Wood ever expressed an unfavorable opinion of anyone. Sometimes, with a little smile, he gave vent to some mild satire or cynicism, but as a matter of fact, General Wood loved his enemies and often spoke of them in affectionate terms. He admired a bold antagonist, gloated over him when he had him down, and then felt sorry for him.

The author has not given all his attention, of course, to General Wood the soldier. About one third of the text is devoted to his experience and his accomplishments as Governor-General in Cuba and in the Phillippines—accomplishments which among high government officials were more appreciated in the West Indies, in Europe and in Asia than in the United States.

Mr. Hagedorn has accomplished a great work, but we are too close to it. In time to come it will be a valuable contribution to American history.

JOHNSON HAGOOD
Major General, U. S. Army.

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BOLIVAR CONDUCTOR DE TROPAS (Bolivar Leader of Troops) by Brigadier General Eleazar Lopez Contreras. 215 pages. Editorial "Elite," Caracas, Venezuela, 1931.

General Contreras of Venezuela, distinguished soldier and military historian, presents an interesting analytical study of Simon Bolivar's campaigns from 1813 to 1821 for the liberation of Venezuela and Colombia. This volume is the first part of a comprehensive historical work which will, when completed, include a study of the campaigns of the great Liberator for the freedom and independence of Ecuador, Peru and Bolivia.

The present volume traces seven distinct campaigns. The first of these covers the operations from Tachira to the capture by the Patriots of Caracas and the capitulation of the Spanish garrison under Fierro. Bolivar conducted this campaign with such consummate skill and rapidity, that it is justly designated as "An Admirable Campaign." The succeeding chapters follow the fortunes of war of the great Liberator in different parts of Venezuela and Colombia, and conclude with the brilliant victory in the second battle of Carabobo, which finally secured independence for Venezuela and Colombia. Although not a soldier by profession and training, the conduct of these operations bears testimony to the prodigious mind, sterling character and iron-will of the great leader whom we honor as the "Washington of South America."

Written in terse, yet fluent, readable literary style, the author treats his subject from a purely military

point of view. He thoroughly orients his reader as to the general and special situations which form the background of each campaign. Sixteen maps and sketches assist the reader in following the operations. Numerous illustrations enhance the interest of the text. The author's critique and apt comments at the conclusion of each chapter are particularly valuable to the student of military history and the art of war. Part II of this valuable and instructive sutdy is in preparation.

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THE UNITED STATES AND DISARMAMENT, by Benjamin H. Williams; 361 pages. Whittlesey House, New York, 1931. (Price $3.00).

The author attempts to analyze the issues between the so-called sea-power theory of history, and the methods of pacific commerce, mutual confidence and cooperative diplomacy. He believes that the United States has a great economic interest in the maintenance of peaceful conditions throughout the world. Disregarding the facts of our history, the author avers that "before the war we Americans had been a non-militaristic nation, proud of our pacific intentions, and of the sharp contrast which distinguished us from the armed nations of Europe". In the author's opinion our navy before the World War endangered no one and caused little apprehension abroad; the army was and still is too small to be a factor in the world's military competition. He laments the fact, therefore, that during and after the war "we were swept forward by new impulses until, in the words of President Hoover, we possessed 'the largest military budget of any nation in the world' ". Thus, the author concludes, we have taken the place of prewar Germany as the greatest spender for prospective wars.

The author marshals his facts and figures and construes and interprets them to sustain his brief in favor of a pacifistic solution of his thesis. Like all pacifists, he places a mess of potage and the precious skin of the individual above national security, self-preservation and self-perpetuation.

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JEB STEWART, by Captain John W. Thomason, Jr., U. S. M. C., with illustrations and maps by the author. 502 pages. Charles Scribner's Sons. $5.00.

Every young cavalier who has not already done so ought to read Captain Thomason's "Jeb Stuart" as soon as he can get hold of it. This biography of a knight *sans peur et sans reproche* is one of the most thrilling true stories ever published in America and should be an inspiration to every cavalry soldier.

Not only was Jeb Stuart the most superb cavalry leader America has ever produced, but as a subaltern in the Old Army, and in every relation of life, he was a model of excellence worthy of any young man's emulation. No d'Artagnan seeking fight for the love of it, but physically and morally fearless. Lying in paroxysms of agony after he was mortally wounded, he refused to take brandy because of a promise he had made his mother twenty years before and because of the wrecks he had seen liquor make of some fine soldiers in the Army.

He had a religious faith as simple and as pure as Sir Galahad's—as different from the austere, lugubrious, puritanical faith of Stonewall Jackson, as day is from night. His was the religion of sunshine, joy, laughter, song. So homely in the face that his classmates at West Point nicknamed him "Beauty", yet of so magnetic a personality that he was always of the elect when there was question of choice.

Captain Thomason writes marvellously well. He was wrought a book that one doesn't want to lay down after beginning it, until one has read the last word. The volume is fascinating to read, and a perusal of it cannot fail to stimulate every young cavalry officer to a higher sense of duty and achievement, who has pride and faith in his arm.

If Jeb Stuart was ever whipped, he never knew it. One of his maxims was "that a man cannot be whipped until he admits that he is whipped." "Nothing discouraged him and he was never so dangerous as when his command seemed to be involved in hopeless difficulties." "His idea for the solution of most situations was attack."

He was always fortunate, even in death. He didn't live to see the cause lost for which he had drawn his sabre; which he, like his great chieftain, Robert E. Lee, believed to be right. And how pathetically Captain Thomason has told his death! If there be a man who can read the last four pages of this book—those which tell of Stuart's bidding his young wife goodbye at sunrise (he was himself not yet thirty-two years old); of her frantic efforts to reach him after receiving the message of his wounding; of his watching and hoping and praying for her to come to him ahead of death; of his dying words, "I am resigned to die if it be God's will, but I would like to see my wife"; of her failure to arrive before he was dead—if any man can read those pages with dry eyes, he is "made of sterner stuff" than Julius Caesar was.

MATTHEW F. STEELE.

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THE AUSTRALIAN ARMY MEDICAL SERVICES IN THE WAR OF 1914-1918, Volume I, Australian War Memorial, Melbourne, 1930. Available from the Official Secretary for Australia, 25 Broadway, New York City, at $5.25 post free. Special rates for quantities.

The preface states that this work is not merely a presentation of the experiences of the Australian army medical services but a comprehensive study of the medical problems arising out of the campaigns dealt with. Part I treats of the Gallipoli Campaign, in which the Australian and New Zealand forces played an extremely important part.

"In the Palestine, and, particularly, the Sinai campaigns, the Australian light horse formed the predominant element in the arm most characteristic of these operations—the mounted troops. An Australian officer—the writer of this part—was, indeed, selected to act as D. D. M. S. to the Desert Mounted Corps*** His contribution, it is believed, though concerned but little with the medical strategy of the campaign, presents the detail of medical work with mounted troops in a completeness not hitherto attempted in connection with modern warfare."

Part III is entitled, "The Occupation of German New Guinea."

PROFESSIONAL NOTES *and* DISCUSSION

Our Principal Arm

By 1st Lt. George A. Rehm, 3rd Cavalry

IN looking back over the National Rifle Team Matches since 1905, it seems there must be some particular reason for the failure of the Cavalry to win the match more than once out of twenty-two matches.

We hear all sorts of "alibis" for this: Our branch is too small from which to pick material. We are divided in our interest, using our best men for horse shows and polo as well as shooting. Summer camps prey on us heavier in proportion to our strength than they do on other branches. These are all just "alibis." We really should have little difficulty in developing a team as small as twelve men, and in our principal arm.

Let us look over the remark that we have a comparatively small branch to pick from. The following are the approximate strengths of the various branches of the services competing: Navy, 81,000; Infantry, 40,000; Marines, 15,000; Coast Guard, 11,000; Cavalry, 7,900; and Engineers, 4,300.

Here is a resumé of the winners since 1906; and it does not take a practiced eye to see that we are far behind:

Marines: 1911, 1916, 1918, 1919, 1921, 1922, 1923, 1925, 1928, 1930, and 1931—total, 11.

Infantry: 1906, 1908, 1910, 1915, 1920, 1927, and 1929—total, 7.

Navy: 1907 and 1909—total, 2.

Cavalry: 1913—total, 1.

Engineers: 1924—total, 1.

NOTE—The National Match originated in 1903 and was won in 1903, 1904, and 1905 by the New York National Guard.

This information shows us that the smaller branches are not working under a handicap. The service third in strength, the Marines, is the most consistent winner of this coveted match.

All of the branches are armed with the rifle and practice annually with that arm; so we are certainly not below the average there. We are armed with the rifle and we should be able to develop experts in that line as well as any other branch.

We cannot blame our system of training. We train and develop our squad as long as the other branches of the services. We spend the same amount of time in preliminary training with the squad. We fire about the same amount of ammunition, and exactly the same type. We use the same type of guns. Our coaches have as much experience, if not more, in rifle teamwork, as any others. Our teams are not overtrained as shown by the performances of the individuals. We enlist the same type of men, and our officers compare favorably with those of other arms.

There must be some other reason for our inability to develop a super team—a winner; but there is only one more phase to investigate and that is the type of competitor that we receive from the regiments. Are the very best riflemen, the high scores of the regiments, their very best men, sent to the tryout?

First, let us look at former squads and, having been intimately connected with seven of them, I assure you that after the first week of firing thirty per cent. of the men are absolutely deadwood. They show average differences per day as much as from 15 to 30 points out of 300. Some of them develop after several years, but that development should be in the regiment and not cluttering up the squad. We are required to pick a team from a squad where but few men can average a score of 278 points after a season of training; yet we train side by side with other teams who open their season with scarcely a man under that average.

I believe the answer is clear—we do not get the very best material that our regiments afford; we do not get men well trained in rifle work, old shots with experience, yet new men for the team.

The team is limited to five men who have previously fired on it, but they can fire only three out of five years. The remaining five men must be men who have never fired in a National Team Match. Seldom does such a man make the team during his first year, and when he does he is quite superior material. Fifteen per cent. is a conservative estimate of men firing on the team who have never previously been to a tryout.

What type of men do we want? The very best men and officers that our service affords. The best riflemen are the men of a superior type, noncommissioned officers and officers. They usually hold very responsible positions in their regiments and would be missed during a training season. Yet you cannot expect a man to develop into a competitive shot in his first, second, or even third target season (a maximum of 505 rounds of firing), any more than you can expect a man to make a first sergeant in the same time—experience plays a large part in the makeup of a team man.

The very best of men must be developed in the regiment; competitive small arms firing, range work and the rifle season are the best training grounds. Then send them to the Cavalry tryout, completely developed by experience and practice, and the 5,000 people at Camp Perry, representatives of all the services and every part of the nation, will again realize that the Cavalry is a formidable competitor.

Observations

THE following observations are the result of active campaign work of cavalry during the World War; that all will agree with the writer is to be doubted but in each instance the observations made have been per-

sonally tested over hundreds of miles of rough, mountainous, arid and desert country.

It was the writer's privilege in 1916, at the request of the British Government, while the writer was an instructor in the Persian Army, to be lent to the British Indian Government to aid the formation of a Brigade of Perisan troops to be called the South Persian Rifles. The purpose of this organization, which was composed of Persian rank and file, Persian officers and Indian officers and non-commissioned officers, was to take the field against the bandits and irregular troops led by Germans operating in Persia. Our headquarters were at Kerman in southeastern Persia opposite British Beluchistan. In the writer's capacity as a staff officer to Sir Percy Sykes he was closely connected with the organization of the First Shah Abbas Cavalry and became its first commanding officer; in addition the writer also at one time actively commanded a force of 350 cavalry in the field. All of the above is mentioned to give a background so that it will be more clearly understood upon what premises the deductions of the writer are made; the writer's cavalry experience in Persia included nearly seven years of which over nineteen months was in the period of the World War with the Kerman Brigade. All seasons of the year were involved as were night marches, marches with long distances between water holes, marches at altitudes of over ten thousand feet, marches in the snow and in the desert and one very hard forced march of a hundred and twenty-seven miles.

The writer believes that cavalry should carry the carbine; that it should be of small calibre, say around .27 to save both weight and to enable the trooper to carry more ammunition. The Persian trooper carries his carbine, or even a rifle, by the sling over his shoulders; the writer has so carried a carbine himself many hundreds of miles, finding that if the sling is kept tight the rider readily becomes accustomed to the weight; the writer's field saddle, fully packed for the field used no saddle blanket but a felt numnah, which in every way is considered better than the blanket; reserve ammunition was carried usually in an extra bandolier hung around the neck of the horse and in some instances an additional bandolier under the horse tied to the girth; this last position was also used occasionally to carry a canvas water bottle, the bottle being hung just back of the forelegs of the horse. It should be noted that all bandoliers were of leather with leather clip pockets, considered to be superior to the web belts used by our cavalry.

It is suggested for consideration that the doing away with the present gun boot and carrying the carbine on the trooper's back would, in a great emergency, release a quantity of much needed leather for shoes and other uses. Some of the Union cavalry in the Civil War carried their carbines on their backs; history records that they were excellent cavalry.

In the writer's humble opinion there is no serious reason for the use of a curb bit in the hands of the average trooper; all cavalry officers know that the mouths of many horses are spoiled by the use or rather misuse of the curb by heavy handed men. In the days when the present Chief of Cavalry was the writer's troop commander in Troop "E" of the Twelfth Cavalry the watering bridle was an useful part of the trooper's equipment; a recruit so equipped would not speedily ruin the mouth of his mount. A bit with a large port and minus the curb is suggested as being feasible.

The three fold leather girth used by the First Shah Abbas Cavalry had an interior filling of flannel which was kept moistened with neat's-foot oil thereby proofing the pliable leather against sweat and hardening; it is considered superior to what our cavalry now uses.

As to the sabre all of the British cavalry officers with the Brigade, including the Brigade Commander, himself a veteran of the cavalry actions of both the Western and Turkish fronts, were for its retention; the First Shah Abbas Cavalry, a regiment of a thousand sabres, four squadrons of two hundred and fifty men each, was in one pursuing engagement where the regiment used the sabre exclusively against a force of some six hundred Persian irregulars. The irregulars fired their rifles from the saddle as they fled; some sixty of the irregulars were killed with the sabre; the sum total of casualties in the pursuing force was one trooper shot in the foot!

One of the writer's pet theories is that the present target season for troops is too concentrated; if the firing, even though not much ammunition was expended, was spread over the entire year, the troopers would be better familiarized with their weapons and, it is believed, better shots would result.

Another suggestion which was presented as long ago as 1920 to the office of the Chief of Cavalry by the writer is that troops in barracks are only too often the victims of excessive post work to the exclusion of training for taking the field; it was suggested that, for the purpose of both training and recruiting, every six months one squadron from each cavalry regiment take the field over a five or six hundred mile course; the squadron remaining at the post should carry on the usual post fatigue; the squadron in the field should live under field conditions of supply; the squadron in the field could make stops of a week or two in likely towns to recruit and to show the civilian population what a squadron of cavalry looks like at close quarters.

With all due respect to the motorized and portée cavalry, whose use in the proper place is readily admitted, the fact should not be lost sight of that in country like the Texas border regions during the rainy season only pack trains and cavalry can "turn a wheel."

John N. Merrill, Major, U. S. A., Refired.

A French Voice About the Modern Army Horse

(Translation from the Deutsche Sankt Georg Sportzeitung, Berlin, 1931, first October edition.)

FRANCE has been, up to the present, the ideal country for the use of the thoroughbred horse, the country with the finest thoroughbred stallions. In spite of considerable curtailment during the past years, the French Stud Commission today still possesses 106 English, 43 Arabian, and 99 Anglo-Arabian thorough-

bred stallions; the French Federal Horse Brood Institution produces with these a wonderful halfbred horse of a high type, for which, however, there is hardly any demand, since modern conditions require only a very small number of horses of so high a type. Immediately after the War, during the restoration of our warmblood broods, we uttered the view that, for the army horse, a very high portion of thoroughbred would be of less importance than ideal temperament, easy feeding, and practical conformation of the body, as rapid and very rapid gaits ordinarily are seldom used, whereas general efficiency on the march and absolute resistance against the multitude of influences on the army horse are essential. Since the termination of the War the use of the thoroughbred in the breeding of our riding horses has lessened; this does not mean that our army horse has lost in quality thereby. A sufficient percentage of thoroughbred must naturally always remain in the army horse, in order to guarantee mobility. France has now arrived at the same conclusions. A wellknown expert regularly publishes good articles under the pseudonym "Prince Errant" in the "Paris-Sport." He recently also expressed his views on the army horse; the following is a copy of the most important part of his views.

"Much has been written about the requirements to be made of a good troop horse. Of the many qualities that one demands of them, each would be worth the price that one expects to pay for a good hunter. The troop horse must be a weight carrier; he must be able to carry at least 265 pounds cross-country. The military horse must stand and wait while the soldier fights. After being mounted, he must travel speedily and take jumps if necessary. Above everything else, the army horse must be strong and robust. Not enough time has passed since the late War as that one should have forgotten the care of the horse during the War, that is, the lack of care. The horse had to stand around under the saddle day and night, exposed to heat and cold. How often was it necessary to ride by night twice the mileage covered during the day! These are, so to say, the passive qualities that are demanded of the army horse. Now come the active qualities: he must possess a certain manner in the gallop, without which he would not be a riding horse. This quality, to gallop, must be crowned by the ability to move very fast at times, as the occasion might arise on patrols, for which duty horses are not likely ever to be eliminated. In addition thereto, the horse should possess a good temperament, in order not to give too much resistance while in training and not to cause difficulties to riders who serve only one year. Therefore, one demands a horse with blood, to assure the ability to gallop; on the other hand, however, the horse must not be high tempered, as the rider of today cannot handle him. There are such horses, but it is surprising to find them at the prices that are paid today for remounts. Army horses, among themselves, are not alike; the remount commissions buy models of various types. And that is necessary. At the assignment of remounts each officer tries to get those horses for his troop that he likes best. These officers choose according to their personal tastes. As they mostly are horsemen, they are usually attracted by the beautiful riding horse, the beautiful horse which often is not the ideal troop horse. The officer chooses for his organization all horses as if they were meant for his personal use. In such cases the officer is hypnotized by the beautiful form, the horse that approaches the thoroughbred type. The officer, in this case, resembles the man who surrounds himself with neatly appearing personnel and values this quality more highly than the efficiency of his personnel.

The army horse must have short legs and must be near the ground, with much depth and much withers, to keep the saddle in place, sturdy, without any protruding bones, so that the harness will not hurt it. The withers, in particular, must be sufficient, but not too high. On a draft horse rather less than too much withers. Broad shins and joints. Rather too large than too small hoofs. One can also consider a good croup and the necessary angle of the shoulders and so demand a good neck, a well carried head and ears. But this horse will be totally void of pure breeding; he will be an astoundingly ordinary horse.

So much the better with little blood, less elegant; the horse will not be endangered through too great a nervousness and made desperate by a rider who, in spite of good will, cannot be made to forget a short training period. Less sensitive, the army horse will suffer less, but serve better. His sturdy conformation will go hand in hand with his absolute resignation to all unfavorable influences. Less reactive, he will stand up longer under strain. Of course, nothing should be overdone. The choice of our remount commissions is adequate, however, to assure a necessary degree of blood that guarantees the capability of moving at increased gaits."

Motors in Lieu of Cavalry

From SABERS, *Official Publication, 56th Cavalry Brigade, Texas National Guard, January, 1932.*

"SABERS," in accord with the policy of the 56th Cavalry Brigade, favors motorized and mechanized equipment as a part of the equipment for the cavalry regiment.

But, if there be gentlemen in high or humble stations who believe, or profess to believe, that motorized and mechanized equipment can entirely be used as a substitute for the horse cavalry, then such gentlemen could very greatly profit by visiting the great East Texas oil field where units of the 56th Cavalry Brigade are and have been on duty since the middle of August, 1931. Here is an area forty-seven miles long, twenty eight miles wide, covered with a forest of pine, oak, and other trees, rolling hills, sandy and red clay, intersected by rivers, creeks, draws, lakes and canyons. It is analogous to a war front of similar extent. Throughout the area are good highways but in the interior of the field throughout its length and breadth are now 3,700 oil wells which must be visited not only by the operators but by the cavalry on duty. In the dry days of summer, the trails throughout the interior of the field were sandy, dusty. Motor vehicles constantly stalled. They were delayed. They broke down. The United States cavalry horses ridden by the Texas

Cavalrymen made the fields by day and by night. Now the drab winter months are here. Rain, rain, rain. Rivers are out of bank; creeks are flowing full and spreading throughout the low lands. Motor transportation of necessity had to be abandoned. Twenty-eight team mules or giant draft horses are required to move on and transport the average oil field boiler. The moving contractors have camps all over the area with thousands of mules and draft horses. The oil operators themselves use the saddle horse. Agents of the railroad commission, equipped with Fords, are weather bound. The Texas Cavalry still rides by day and by night. They swim streams; a patrol starts out, horses groomed, uniforms clean, leather equipment fine, and returns after an eight hour tour caked with red mud—red clay. But they carry on in the drizzling rains, the cold northers, by day and by night, while motorists stand parked everywhere except on the hard surfaced highways.

Because the situation in East Texas is so analogous to a war zone, entailing as it does the movement of men, the movement of supplies, the transportation of equipment, the lines of communication, distribution of messages, all this by both operators and military forces. In all seriousness, "Sabers" believes that the War Department could, with profit, send officers into that area to inspect and observe. Never elsewhere except after a war is on or under a future similar situation will there be afforded to the War Department experts such an opportunity for real investigation of problems that always interest the Army.

On the Cost of the Army

By Lieut. Col. Kinzie Edmunds, Cavalry

BILLIONS, raised by taxation, are being expended throughout the world on armies and navies. It is natural to conclude that these expenditures are a crushing burden on the people concerned; that their removal would be a blessing to everyone; and that, diverted into other channels, they would restore prosperity and raise the standard of living. We are all familiar with the cartoon of the "Common Citizen" bowed down under a load of cannon, rifles and war ships. The figures as to the amount expended for defense are probably correct. The conclusion, that these expenditures constitute a burden which can be removed, is false. The conclusion would be correct were soldiers and sailors being held out of productive work, but they are not. They are merely being held from idleness. The conclusion would also be correct if idle workmen were allowed to starve or die of exposure, but again they are not. In one way or another, they and their families are supported at the expense of the Public.

A little reflection, even by one unversed in the intricacies of finance, leads to the startling conclusion that, for an industrialized country, it costs little more, and perhaps less, to have a large defense force than to have none. This is from a purely economic standpoint with no reference to the military perils involved. The fact can best be illustrated by England, for that country has taken the logical step of supporting her idle millions through taxation rather than through charity and the loss of rent. Would it cost England any more to support her idle, or their substitutes, in a large army? I think not. It would cost less in one way, since single men are usually taken for an army, and families as well as idle workmen must be supported by the Dole. It would cost more only if the "keep" of a soldier exceed the amount of the Dole, and in that materiel must be bought for an army in addition to food, shelter and clothing. However, this materiel (cannon, rifles, ammunition, airplanes, tanks, etc.) involves production which in turn supports labor.

Is it a coincidence that the two countries which have the largest standing armies, France and Russia, have also the fewest unemployed? A conclusion is not warranted, but the reasons would bear investigation.

In the United States the cost of the Army is of record, while the cost of unemployment is not. On account of the lack of data no one can figure the latter cost; we do not even know accurately how many unemployed there are; but it undoubtedly runs into the hundreds of millions. Charity, loss of rent, repudiation of debt and loss of values, while not listed, are supported by the Public in just as true a sense as if their cost were computed and defrayed by the Government through taxation. Even where idle workmen are living on their own savings, capital is consumed which is a loss to the country as a whole. The economic effect of the discharge of the, approximately, 200,000 men in the Regular Army and Navy would be simply to swell the ranks of the unemployed by this number, or a greater one, and transfer the cost from one pocket to another. They would either be idle themselves, or, what is more likely as they are, in general, young, able-bodied men of intelligence beyond that of the average laborer, they would take the jobs of the least fit now employed, who would in turn be idle.

Actually, unemployment could be eliminated in the United States, at no additional cost to the country, by putting the Selective Service Act into operation and raising a draft army large enough to absorb the surplus of labor. Possibly the cost would be less for it is to be noted that the Selective Service Act would take from industry young men, without dependents, whose places could be filled—would have to be filled—by the present unemployed, many of whom are older men with families. If there are 6,000,000 unemployed in the country, the total number now being supported at public expense is probably nearer 12,000,000. Also, it would not be necessary to enlist as many as 6,000,000 since an army is a heavy consumer of goods, necessitating greater production and, hence, stimulating employment.

Of course it is useless to advocate such a system for this country, as we are not educated to the principles of compulsory peace service. To place such a plank in any party platform would be equivalent to political suicide; imagine the yelps of anguish from the Pacifists! From a military standpoint the system is not desirable. For the soldier, it would substitute in place

of the spiritual forces of patriotism, service and sacrifice, the purely material one of belly-filling and would turn a conscript army, uninspired by a call to arms or the necessities of national defense, into a gang of convicts.

A varying amount of unemployment seems to be unavoidable, and even necessary, in industrialized countries; necessary as a reservoir from which industry can draw labor when production is stimulated by demand. It would be interesting to speculate if our Government will ever follow England's example and support such a reservoir and what form such support might take, but this would be a digression from the subject. However, the use of a large army for the purpose is theoretically practicable. The French Army, undoubtedly though unintentionally, serves the purpose to a degree, as did the German Army before the World War. An army is cheaper than the Dole, has other useful functions, can be readily expanded or contracted in accordance with the Dole, has other useful functions, can be readily expanded or contracted in accordance with the needs of the situation, and has the immense advantage over the Dole of providing work for its members. Its work has the singular virtue of being non-productive and hence, of not competing with industry. To any productive form of government work there is the same objection as applies to marketing the products of conviet labor.

The question arises if there is any practicable method, other than an army, of maintaining surplus labor without idleness. Possibly it could be accomplished by the subsidy of industry to pay additional labor and, at the same time, to limit production by shortening hours without reducing wages. Such a system is liable to grave abuse but merits study. An advanced form of State Socialism, it would probably be anathema to our Legislators. The surplus of labor would become a surplus of time.

Returning more nearly to the subject, the cost of our Army is one of the lowest in the world in total, in proportion of national wealth, in percentage of total government expenditure and in per capita cost to tax-payers. It is one of the highest, however, in cost per Regular soldier. This is because our standards of living are, in general, higher than those of other countries, because a large proportion of the expenditure goes to National Guard and Organized Reserves who serve only intermittently, and because a volunteer army must be paid. A draft army need be given little but its food, shelter and clothing. A common error is to take the amount of the Congressional appropriation as the cost of the army. This is not exact as the Army sells as well as buys, and the proceeds of sales, as well as any savings on appropriations, go direct to the Treasury and are not used for expenses.

The cost of the Army is largely made up of the pay, subsistence, shelter and clothing of its personnel. The cost of materiel, while enormous in war, is quite limited in peace. However, the latter cost will increase relatively as Mechanization increases, i. e. the substitution of airplanes, tanks, tractors, armored cars and trucks for the arms and legs of men. The cost of materiel is largely in the pay of the workmen who manufacture it and who would, otherwise, be supported in idleness.

The conception of the Army, therefore, as an economic burden on the country is largely illusory. The burden, a light one in the case of the United States, exists but can not be thrown off, even at the peril of national defense, while unemployment also exists. The burden may be reduced by economies in operation and reduction in the cost of materiel. It can not be avoided by reduction in personnel so long as there is a surplus of labor.

Notes from the Cavalry Board

Cavalry Machine Gun Instrument Pack.—In August, 1926, the Chief of Ordnance allotted to the Quartermaster General funds for the development, at the Jeffersonville Depot, of two machine gun instrument pack loads and accessories.

These packs were completed and forwarded to Fort Bliss, Texas, where they were initially tested by the First Cavalry Division Board. Due to excessive weight (226 pounds) that Board recommended elimination of certain articles of equipment and a modification of the packs.

In April, 1929, the packs were sent to the Cavalry Board for test, the modification having been completed.

The Machine Gun Instrument Pack as received comprised a top carrier for the Range Finder with its tripod and lath; an offside hanger for six shovels, E. D. mining, and two steel cases with fire control instruments; and a near side hanger for six pick mattock handles, a steel case with six pick mattocks, and another steel case with fire control instruments.

The cases for fire control instruments each contained one angle-of-site instrument with its carrying case; one protractor, semi-circular; and one boxwood alidade.

After a thorough test of the pack and accessories, the Board was convinced that the load was still excessive and accordingly eliminated the case for the pick mattocks putting them in the case fittings, placed on the hanger in the place previously occupied by the case. As excess of six and one half pounds over the authorized two hundred pound load was still evident. It was found that this modification resulted in a well balanced and a well riding pack load. No ill effect on the pack horses was observed other than some lagging and diminished activity in negotiating obstacles. The motion of the horse had a slight effect upon the halving adjustment of the range finder, making it necessary to readjust it from time to time. It was found that this could be done in a few seconds.

The Board after having completed its test found that the weight was still excessive and that the steel case for pick mattocks was unnecessary and undesir-

able. It was recommended that the hangers be redesigned, made of lighter metal where possible, eliminating excessive metal, and that every effort be made to lighten the entire pack. The Ordnance Department has just completed the redesign at Rock Island Arsenal, and the latest product will shortly be placed in test. It is hoped to expedite the test and to have the instrument packs adopted and issued in the minimum time.

Magazines for Automatic Pistol, Caliber .45, Model 1911. The Cavalry Board, for the past nine months, has been engaged in studying the various causes which are contributing to the excessive expenditure of magazines for the Automatic Pistol, caliber .45.

In accumulating the data on this subject it was found that at several cavalry posts an excessive number of magazines were turned in in an unserviceable condition during the year.

The commanding officer of a squadron post believed the trouble to be due to the fact that on the present issue web magazine pockets, there is a snap fastener over each magazine which is pushed into the magazine, resulting in denting the sides to a more or less marked degree whenever the man leans forward in assuming the various lunges mounted.

At a brigade post, the Board had the opportunity to make closer observations and to classify what it believed to be the various causes of unserviceability.

Following are the principal defects noted:

Dented tubes from pressure on fasteners on web pockets. Probabaly 90% of these can be attributed to the pocket fastener. The remaining 10% are dented in such places as to make it appear more probable that the dents occurred from other causes, such as dropping the magazine or striking it with some other object.

Spread lips. The lips of the magazine are opened out to such an extent as to make it possible for the point of the bullet to rise too quickly as it is forced forward, and enter the chamber at too great an angle. It will be noted that practically all magazines with spread lips were also dented in the tubes, making it difficult to estimate what proportion became unserviceable due to this cause alone. In addition to the normal wear on the lips, their spreading is due also, in all probability, to failure to press down the rim of the cartridge before pressing it to the rear when loading the magazine.

Split tubes. These splits occur at the top and bottom of the tube. Those at the top—approximately 50%—occur at the upper rear corners of the magazine and, probably, like the spread lips, are caused by forcing the cartridge backward without pressing it down into the magazaine.

Battered or damaged from other than ordinary causes. These were due principally to having been stepped on by horses after having been dropped.

Tubes dented from pocket fasteners included in above. Those shown in this column have the two defects of spread lips and dented tubes.

A further summary of the defects is as follows:

Tubes dented only	15 %
Tubes dented and lips spread	42 %
Lips spread only	18½%
Split tubes	8 %
Abnormal defects	16½%

Observation of troops in running the saber course and in executing the various lunges with the saber has not made it evident that the magazine pockets come in severe contact with the pommel of the saddle, however, no doubt, in exceptional cases this does happen. There are various other ways in which the magazines frequently become dented, such as while mounting restive horses, by dropping the belt carelessly after removing it from the waist, by lying on the magazines when shooting in the prone position, and many others.

The Cavalry Board has recommended already the adoption of a web double magazine pocket with only one fastener in the center to replace the present magazine pocket with two fasteners. When these pockets are issued, upon exhaustion of the supply of the present magazine pockets, at least 50% of the present problem should be solved. However, care in handling the pistol magazines, particularly in loading them, will go a long way towards increasing their life. Troop commanders should make it a point of special importance to see that every man is duly instructed in the proper loading of pistol magazines, and especially that they should press the rim of the cartridge well down on the forward end of the magazine follower before pushing the cartridge to the rear into the magazine. Absolute cleanliness both inside and out also will add materially to the life of the magazine.

CURRENT TOPICS

Maj. Gen. George E. Leach, who became chief of the Militia Bureau, December 1, 1931.

Minutes of the Annual Meeting of the Cavalry Association

Washington, D. C., January 25, 1932.

The meeting was held at the Army and Navy Club, Washington, D. C., this date, being called to order at 8:20 p. m. by the President. Thirty-six members were present in person and 638 by proxy.

Upon motion it was voted to dispense with the reading of the minutes of the last meeting.

The annual report of the Secretary-Treasurer-Editor was read as follows:

Washington, D. C., January 25, 1932.

To: The United States Cavalry Association.

Gentlemen:

There is submitted herewith, as required by the Constitution, the financial statement for the year ending December 31, 1931, and the report of the activities of the Association for the same period.

FINANCIAL STATEMENT OF THE UNITED STATES CAVALRY ASSOCIATION FOR THE YEAR ENDING DECEMBER 31, 1931.

Cash Statement

Account	Receipts	Expenditures
Balance, January 1, 1931	$3,565.85	.....
Advertising	415.33	.....
Book Department	10,687.36	$9,820.07
Dues and Cavalry Journal	3,773.74	4,782.82
Interest	953.34	.....
Postage, Stationery, Incidentals	.25	491.74
Rent	420.00	1,080.00
Saddle Department	240.00	144.96
Salaries	.....	1,895.00
Telephone	86.38	175.64
Telegraph	.....	3.50
Investments	2,000.00	2,131.67
Trophies	.....	308.02
Balance, December 31, 1931	.....	1,308.83
Total	$22,142.25	$22,142.25

Assets (Exclusive of Securities)

Cash in bank, December 31, 1931	$1,308.83
Stock on hand, books	519.38
Office Equipment and Supplies	359.80
Accounts Receivable:	
Book Department	1,841.73
Dues and Cavalry Journal	1,709.60
Saddle Department	65.00
Telephone, F. A.	7.15
Small Cash	1.89
Total	$5,813.38

Liabilities

Bills Payable (Ledger accounts)	$375.17
(Telephone, December)	12.55
Due Customers on Unfilled Orders	47.52
Net Value (exclusive of securities), Dec. 31, 1931	5,378.14
Total	$5,813.38
Net Value (exclusive of securities), Dec. 31, 1930	$6,158.94
Net Value (exclusive of securities), Dec. 31, 1931	5,378.14
Decrease in Value during 1931	$780.80

Of the decrease of $780.80, $131.67 has been transferred to Securities, leaving actual decrease, $649.13.

Net Value (exclusive of securities), Dec. 31, 1931	$5,378.14
Total Securities, market value, Dec. 31, 1931	9,395.00
Total	$14,773.14

Washington, D. C., January 23, 1932.

We, the undersigned, appointed by the President of the United States Cavalry Association, to audit the accounts of the Treasurer of said Association, for the year ending December 31, 1931, do hereby certify that we have examined the books of account, vouchers, and the foregoing statement, covering said fiscal year, and that the same are correct and true, to the best of our knowledge and belief.

ROBERT J. FLEMING
Colonel, Cavalry
LLEWELLYN W. OLIVER
Colonel, Cavalry
OSMUN LATROBE
Colonel, Cavalry

Securities

The following securities are owned by the U. S. Cavalry Association; the prices paid, the market value as of December 31, 1931, and comparative values of the fund are shown:

No.	Bond	Price Paid	Present Value	Total Paid	Total Present Value
2	Southern California Edison Co., bought April, 1931	105	97¾	$2,100.00	$1,955.00
2	Baltimore & Ohio Ry. Co., bought Feb. 26, 1929	82	57	1,640.00	1,140.00
2	Rio Grande Western Ry. Co., bought Feb. 26, 1929	83⅞	43	1,677.50	860.00
2	Kentucky Utilities Co., bought Feb. 23, 1929	99	75½	1,980.00	1,510.00
1	North Carolina Gas Co., bought Feb. 26, 1929	97	35	970.00	350.00
1	Foltis-Fischer Co., bought Feb. 26, 1929	99½	40	995.00	400.00
2	Consolidated Gas Utilities Co., bought March 6, 1929	97	29	1,940.00	580.00
1	Professional Arts Bldg., Atlantic City, bought Feb. 26, 1929	98	80	980.00	800.00
2	Theatre Realty Co., Easton, Pa., bought Feb. 26, 1929	96	60	1,920.00	1,200.00
1	Atlantic Gas Co., Phila., bought Oct. 18, 1929	98	60	1,960.00	600.00
				$16,162.50	$9,395.00

Securities which were bought for $16,162.50 were worth only $12,859.50 December 31, 1930, and have gone down still further to $9,395 as of December 31, 1931, a decline for the year of $3,464.50 and a total depreciation of $6,767.50.

Net Value (Exclusive of Securities)

The decrease in net value (exclusive of securities), which amounts to $649.13, is due to the disadvantages of operating without paid advertising and to printing costs, which will be materially reduced for 1932.

Investments

My predecessor, Major Oliver L. Haines, collected $2000 for two real estate notes, which had matured. By authority of the Executive Council, he made a reinvestment of $2131.67, purchasing two Southern California Edison 5% bonds (1954).

All securities are paying interest except the North Carolina Gas Co., which has withdrawn its coupons and is paying dividends only as they may be justified by earnings. The company will probably go back to a coupon basis in 1935; in the meantime not much can be expected from this source. The income from the other bonds is $795 annually.

Membership and Subscriptions

The following is an analysis of the Association membership and subscriptions:

Regular Cavalry Officers	847
National Guard Cavalry Officers	238
Reserve Corps Cavalry Officers	337
Other Active Members (Retired Cavalry and General Officers)	90
Associate Members and Subscribers	337
Total Paid	1,849
Honorary Members	3
Life Members	2
Exchanges	67
Total	1,921

The Cavalry Journal

THE JOURNAL, which was operating on a quarterly basis, became a monthly in January, 1931, and also had a monthly issue in February. Paid advertising having been eliminated as a result of legislation in February, the Executive Council, at a meeting March 6, 1931, directed the Secretary-Treasurer to publish the JOURNAL as a bi-monthly commencing with the March-April issue. Publication was continued on this basis throughout the remainder of the calendar year 1931.

GEO. M. RUSSELL
Colonel, Cavalry
Secretary-Treasurer

Upon motion the report of the Secretary-Treasurer-Editor was accepted.

The following were unanimously elected to the offices indicated:

President: Major General Guy V. Henry
Vice-President: Colonel Harry N. Cootes, 3rd Cavalry
Executive Council: Colonel Leon B. Kromer, Cavalry
Colonel Llewellyn W. Oliver, Cavalry
Colonel Aubrey Lippincott, Cavalry
Colonel Edward J. Stackpole, Jr., 104th Cavalry
Colonel John Philip Hill, 306th Cavalry
Lieutenant Colonel Henry D. Whitfield, Cavalry Reserve
Major Alexander D. Surles, 3rd Cavalry
Captain Lucian K. Truscott, Jr., 3rd Cavalry
1st Lieutenant Willard A. Holbrook, Jr., 3rd Cavalry

Following the election of officers, the President gave a short talk to the members on recent developments in Cavalry organization and equipment and on the duties of the Cavalry Association in connection with conducting the Equestrian Events and the riding phase of the Modern Pentathlon in the 1932 Olympic Games, Los Angeles, California.

There being no further business, the meeting adjourned at 9:10 p. m.

GEO. M. RUSSELL,
Colonel, Cavalry.
Secretary.

SPORTS

Horses on United States Olympic Squad

LOUD and generous has been the praise accorded the Olympic jumping string of the United States Equestrian Team which competed for the International Military Trophy in the National Horse Show at Madison Square in 1931. Above all, that praise has been merited—there can be no question otherwise. France, Canada, Great Britain, Ireland, and the United States were represented. America won with a perfect score—and no team can do better!

This superb performance will serve as an incentive to the American rider to work harder through the months intervening prior to the Xth Olympiad to be held at Los Angeles, the equestrian sports of which are to take place from August 12th to 14th, 1932, both dates inclusive.

The squad of riders and horses to represent the United States at Los Angeles has been collected at Fort Rosecrans, near San Diego, where training will be continued until next summer when they will move on to Los Angeles. Colonel C. L. Scott is manager of the team, and Major H. D. Chamberlin is in charge of training.

It will be of interest to know something of these equestrian sports.

The horse-loving public of America will have an opportunity of seeing the best of America's horsemen and horses competing with the equestrian representatives of a dozen or more foreign nations—teams from Europe, South America and the far-away Orient.

The Equestrian Sports consist of three separate and distinct events, each complete in itself. One or more of the events will test the endurance, courage and skillfulness of both rider and horse.

FIRST: *The Concours Complet d'Equitation, or Three-Day Event.* As the name implies, the event lasts three days, a different phase being held each day. It is designed to test the ability of a truly good charger or hunter when well trained and in the best of condition.

On the first day, there is a training or schooling test; the purpose of which is to show the suppleness and obedience of the horse and the skill of the rider. The test is not so difficult as the *Dressage* referred to below, but one in which the horse must be shown at the collected walk, trot and canter, and the extended walk, trot and gallop; in backing, changes of direction and two-track work. The horse and rider are marked on the manner in which each movement is performed.

On the second day, there is a 36-kilometer (22-mile) endurance test; the object of which is to test the cross-country ability and endurance of a charger and hunter. The test is over varied terrain with numerous natural and artificial obstacles. 22 -kilometers (13-miles) of the test are on roads and trails; a 4-kilometer 2½-mile) steeplechase; a cross-country phase of 8-kilometers (5 miles) necessitating the taking of from 30 to 35 obstacles, and terminating with a 2-kilometer (1½-mile) gallop on the flat. A minimum time is allotted to each of the several phases of the test, as well as a minimum of 2 hours and 5 minutes for the entire course.

On the third day, there is a jumping test over 12 natural obstacles in the stadium of not to exceed 1 meter, 15 (approximately 3 feet, 9 inches) in height or 3 meters, 50 (11 feet, 6 inches) in breadth. The speed at the gallop must be not less than 375 meters (410 yards) per minute. The object of this test is to demonstrate that a good charger or hunter on the day following a severe effort is still able to carry on.

SECOND: *The Prix des Nations, or Jumping Competition.* This is a stadium jumping contest in which the contestants must take from 16 to 20 intricate jumps, varying in height from 1 meter, 25 (4 feet, 1 inch) to 1 meter, 50 (4 feet, 11 inches) and a width of not to exceed 4 meters (13 feet). The length of the course is 800 meters (875 yards), which must be covered at the rate of 400 meters (437 yards) per minute.

THIRD: *The Individual Dressage, a Training or Schooling Event.* This is designed to show the skill and ability of the rider in controlling his mount, and the latter's obedience to the will of the rider. This event is held in an arena (60 meters—196 feet—by 20 meters—65½ feet). The rider must show his horse at all gaits; at two-track work, change of lead at the gallop, on the circle and on a straight line at each stride, and at such high-school movements as the *passage* and the *piaffer.*

Each event is open to teams of 3 riders and 3 horses from each competing nation. Team and individual prizes are awarded.

While interested in the riders and in a knowledge of the conditions of the equestrian events, readers of the CAVALRY JOURNAL will no doubt be more greatly interested in what sort of horse-flesh is to represent America. The following tabulation gives a description of each horse in the squad at Fort Rosecrans and from these animals the final selection will be made:

(See lists below)

These horses have been secured in several ways. A few have been generously donated by civilians; some are private mounts of army officers; the great majority, however, are the property of the U. S. Army. These again represent horses developed in our regiments scattered throughout the length and breadth of

our land, at the army equitation schools at Fort Riley and Fort Sill or through individual efforts of interested officers or citizens.

From a breeding view point the list is very interesting as it is conclusive proof that the years of constant effort by the Remount Service to improve breeding and type have not been in vain—practically every horse is one-half bred or better. The former well-known and prepotent sire "Unk" has only three of his get on the team! This is indeed most gratifying! Likewise the list stands as a tribute to the resourcefulness, skill and training ability of the American army. To take the horseflesh at their disposal and develop, train and condition these animals for the gruelling events on the equestrian sports program of the Olympic games is indeed an accomplishment worthy of praise. Such tests if carefully watched cannot but furnish lessons for breeders of horses.

THREE DAY

Name.	Color.	Sex.	Foaled.	Height.	Weight.	Breeding.	Sire.	Dam.	Owner.
Chandler	C	G	1925	16.2	1160	T.B.	Sand Marsh	Katherine V.	Mrs. D. S. Rumbough, Ft. Sill, Okla.
Honolulu Tomboy	C	M	1926	15.2½	1050	T.B.	Honolulu Boy	B. M. 534.	Government.
Lord Russel	B	G	1925	16.2	1200	T.B.	Gordon Russel	T. B.	Capt. D. A. Danforth, F. A., Ft. Sill, Okla.
Aeronauta	B	M	1926	16. ½	1000	T.B.	Out of the Way	Kaachia	Government.
Squire	Br.	G	1923	16	1100	½ T.B.	Esquire	Unk.	Government.
Va. Navarre	B	M	1926	16.1	1140	⅞ T.B.	McDonno	⅞ T. B.	Government.
Jenny Camp	B	M	1926	16	1000	½ T.B.	Gordon Russel	B. M. 392.	Government.
Frills	B	M	1926	16	1050	T.B.	Thunderstorm	Mabel Clarkson	Government.
Miss Neill	Bl.	M	1926	16	1160	T.B.	Fitzgibbon	Miss Neil	Government.
Sparkler	B	G	1923	16.2	1150	T.B.	Ft. McLeod	Florence Campbell	Government.
Don R.	B	G	1925	16	1060	¾ T.B.	Gordon Russel	½ T. B. S. M. 392	Government.
Merrimac	Gr.	G	1921	16.2	1160	T.B.	(French) T. B.	(French) T. B.	Government.
Directorix	C	M	1925	15.1	1050	T.B.	Honolulu Boy	T. B.	Government.
Pleasant Smiles	B	G	1924	16.1	1100	T.B.	Transvaal	Bread Winner	Government.
Yala	C	G	1925	15.2	1020	T.B.	Crogin Gordon	Pretty	Mrs. B. O. Hickman, Louisville, Ky.
Sun Magic	B	G	1925	16.1	1175	¾ T.B.	Magic II.	Dam by "Octagon"	Maj. H. D. Chamberlin, Cav.

DRESSAGE

Name.	Color.	Sex.	Foaled.	Height.	Weight.	Breeding.	Sire.	Dam.	Owner.
Olympic	B	G	1924	16.2½	1225	T.B.	Radius Rosa	Odette VI.	Capt. H. E. Tuttle, Q. M. C.
Si. Murray	C	G	1927	15.3	1000	T.B.	Bunting	Scrub Lady	Capt. H. E. Tuttle, Q. M. C.
Highbrow	Br.	G	1927	16.2	1200	½ T.B.	Massa Hughes	Std. B.	Government.
K X K	C	G	1924	16	1175	½ T.B.	K. of K.	Unk.	Government.
American Lady	B	M	1921	16	1025	T.B.	Prince Henry	Half a Sovereign	Government.
Thurston	C	G	1924	16.3	1200	⅞ T.B.	Magic II.	¾ T. B.	Government.
Water Pat	Br.	G	1924	15.3	1100	T.B.			Government.
Trouble	B	M	1924	15.1	959	½ T.B.	T. B.	Std. B.	Civilian owner, Mrs. Yawkey, N. Y.

JUMPERS

Name.	Color.	Sex.	Foaled.	Height.	Weight.	Breeding.	Sire.	Dam.	Owner.	
Sir Neal	C	G	1924	16.2½	1150	T.B. ¼ Hack			Maj. H. D. Chamberlin	
Judge	Br.	G	1924	17. ½	1350	Irish			Maj. H. D. Chamberlin	
Reno Baby	Bl.	M	1926	15.3	1100	¾ T.B.	Esquire	½ T. B. B. M. 45	Government.	
Sally Gun	Br.	M	1926	16. ½	1100	¾ T.B.	Gordon Russel	½ T. B. B. M. 484	Government.	
Ugly	B	G	1919	15.3½	1050	Unk.			Government.	
Clysmic	C	G	1921	16	1075	½ T.B.	Clysmic		Government.	
Tyrol	B	G	1919	15.1½	950	Unk.			Government.	
Texas Boy	C	G	1921	15.3	1075	T.B.	Brother Comptan	Princess Olga	Capt. F. W. Koester, Cav.	
Paint Girl	Pnt.	M	1925	16	1150	½ T.B.	T. B.		Capt. F. W. Koester, Cav.	
Ansonia	Br.	G	1920	15.1½	1050	½ T.B.	Yarek	Unk.	Government.	
Avocat	B	G	1924	16.2	1150	¾ T.B.	Trial by Jury	½ T.B. B.M.—C. 163	Government.	
Peter Pan	B	G	1920	15.3	1100	½ T.B.	Serf Savin		Government.	
Dan Anthony	C	G	1921	15.3½	1075	T.B.	Irak	Lady Eunica	Government.	
Babe W.	B	G	1919	16.2½	1175	½ T.B.	Henry of Navarre	½ Coach	Government.	
Tan Bark	Bl.	G	1916	16	1100	Unk.			Government.	
Show Girl	Gr.	M	1924	15.3	1150	T.B.	Stress	Chanata	Capt. F. W. Koester, Cav.	
Dick Waring	B.	G	1917	16.1½	1200	¾ T.B.	Walking John	Miss Possum	Government.	
Joe Aleshire	B.	G	1920	16.1	1200	½ T.B.	Red (S. B.) McDonald	T. B.	Government.	
White Oak	Gr.	G	1925	15.2	1025	½ T.B.	Heart of Oak		Mr. Fred Pabst	
Suzanne	B.	M	1921	15.2	950	½ T.B.	Red (S. B.) McDonald	T. B.	Government.	
S-3	Rn.	G	1920	16.1	1100	Unk.			Government.	
Marie Bank	B.	M	1926	15.3	1050	T.B.	Bank	Wee Mana	Government.	Pentathlon prospects.
Sarah Lackey	Br.	M	1926	16.0	1125	½ T.B.	Gordon Russel	Unk.	Government.	
Kan	C	G	1926	16.2	1200	T.B.			Lt. A. A. Frierson, Cav.	
John Barry	B	G	1926	16.3	1290	Ir.T.B.	Scene Shifter		Lt. J. W. Wofford, Cav.	
Diplomat	Br.	G	1920	16	1100	T.B.(?)			Lt. J. W. Wofford, Cav.	

Members of the 1932 U. S. Army Olympic Equestrian Squad mounted on horses sired by remount stallion, Gordon Russel.

The Horses of the United States Army Horse Show Team

SET forth in tabular form herewith is some interesting information on the ninteen horses that composed the United States Army Horse Show Team which competed with horses and riders representing the armies of England, France, Canada, and the Irish Free State this past Fall. The group represents the nucleus of the *Prix des Nations* Team for the 1932 Olympic Games Equestrian Teams. Ten of the horses were exhibited for the first time with the show team; this is in keeping with the policy of the Chief of Cavalry of developing new blood to replace "old galloping hoofs." The column labeled "Breeding" discloses the gratifying influence of our far-sighted Remount Service and its constant endeavors to improve the breeding, type, and quality of Army mounts —fourteen of the show team horses are one-half bred or better. The original source of all the public-owned horses is, of course, through the Remount Service, either by purchase or by depot breeding. It is interesting to trace the military career of some of the show team horses from their entry into the service until their passing through the gilded portals of Army horsedom's inner circle. Seven of the horses were developed by regimental organizations scattered throughout the country. It is a big leap from drilling in the ranks as a lowly trooper's mount on the plains of Kansas or the mesquite of the Texas border, to parading and exhibiting as a super-horse in the magnificent show rings of Madison Square Garden, Boston, and Toronto—such, however, was the proud record of *Ugly*, late of the 13th Cavalry. *Ugly* blazed his name in glory on the front pages of New York's greatest dailies. Prior to this his name had been hidden on his animal descriptive card. *Ugly* entered the equine hall of fame by being one of the three horses to represent the United States in the International Team Event—to him was accorded the honor of "lead off" horse: *Ugly* turned in a perfect performance. Later, *Ugly* won the International Individual Military Championship open to officers and horses of all nations. Four of the horses on the team are products of the Cavalry School, starting in as remounts for their preliminary training and winding up on the show team. Others, like the veteran *Proctor*, *Miss America*, and *Babe Wartham*, have been on either the U. S. Army Show Team or on past United States Olympic Equestrian Teams.

The nineteen horses of the U. S. Army Horse Show Team accounted for a total of 113 ribbons, of which thirty-one were blues. The competition was of the stiffest nature, including not only the cream of our civilian horseflesh but also the wonderful horses belonging to our foreign army visitors.

Outlined below is a special table giving the results of the strictly international military competition between teams representing the armies of the United States, England, France, Canada, and the Irish Free State.

SHOWING MADE BY THE HORSES OF THE U. S. ARMY HORSE SHOW TEAM DURING THEIR EXHIBITIONS AT THE FOLLOWING HORSE SHOWS

St. Louis Horse Show, St. Louis, Mo., Oct. 12-17, 1931; Boston Horse Show, Boston, Mass., Oct. 22-31, 1931; National Horse Show, New York, N. Y. Nov. 5-11, 1931; Royal Winter Fair, Toronto, Can. Nov. 18-20, 1931.

1	2	3	4	5	6	7	8	9	10	11
Horse	Experience on Army Team	Breeding	Obtained from	Number of Classes Entered	Number of Ribbons Won	Number of places won				
						1st	2nd	3rd	4th	5th
Ansonia	First Year	½ TB	1st Cav.	27	5	2	2	1		
Suzanne	Previous	½ TB	3rd Cav.	25	14	6	4	2	2	
Ugly	First Year	Unk	13th Cav.	19	13	3	4	3	2	1
Show Girl	First Year	TB	Officers Pvt. Mt.	24	14	5	6	1	1	1
Peter Pan	First Year	½ TB	Sig. Tr. 1st Cav. Div.	23	4	1	1		1	1
Avocat	Previous	¾ TB	Cav. Sch. USAHS Team	23	5	1	1		3	
S-3	First Year	Unk	7th Cav.	17	4	1	1	1		1
Tyrol	First Year	Unk	1st Cav.	16	9	2	3	1	3	
Miss America	Previous	½ TB	USAHS Team	18	7		2	2	2	1
Tan Bark	Previous	Unk	USAHS Team via Cav. Sch.	23	13	6	2	3	1	1
Joe Aleshire	Previous	½ TB	USAHS Team via Cav. Sch.	12	2	1				1
Clysmic	First Year	½ TB	82nd F. A.	14	7	2	3	2		
Buckaroo	Previous	Unk	Civilian owned	12	6	1	3	1	1	
Knockshegowan	First Year	½ TB	Civilian owned	9	2			1		1
Proctor	Previous	TB	USAHS Team	10	2					2
Dick Waring	First Year	¾ TB	Cav. Sch. USAHS Team	3	1			1		
Babe Wortham	Previous	½ TB	USAHS Team	7	3				1	2
Rinkie	First Year	½ TB	Civilian owned	3						
Geraldine	Previous	½ TB	USMA	4	2		1			1

USAHS—United States Army Horse Show Te m

The Foreign Military Press

Reviewed by Major Alexander L. P. Johnson

MEXICO—*Revista del Ejercito y la Marina*—October, 1931.

"The Next War," by Brig. Gen. Napoleon Cabrera.

The science and art of war experienced rapid development since the World War. Another conflict would imperil civilization. Notwithstanding, the predominant obsession of the world today is WAR. All great powers are preparing for the next conflict. The peace which followed the last holocaust is but an armistice while the combatants gird themselves for the next round. The League of Nations, disarmament conferences, anti-war pacts are mere Utopias. The first article of the Treaty of Paris is already a dead letter. Japan bluntly rebuffed all attempts of the League to intervene in the Manchurian imbroglio. "What Japan is doing today to the Chinese, the Yankees will be doing unto us tomorrow. Who can doubt that? ..... Alerta Mexicanos!"

It is indeed regrettable that General Cabrera's commendable patriotic appeal to his countrymen for greater preparedness for national defense should be actuated by a fear of American aggression. Nothing is more foreign to the American people than a desire to inflict the least injury upon their neighbors south of the Rio Grande. In the light of the general world situation the timeliness of General Cabrera's appeal is or should be patent to all who place national security above the bauble of pacifistic slogans. Even in more normal times a reasonably adequate, efficient and well-organized military establishment would unquestionably redound to the benefit of the Mexican State and Nation.

The United States Army, ever ready to share its facilities with others, has time and again welcomed officers of the Mexican Army to its service schools and garrisons for professional training and experience. This, as well as contacts in the field of athletics and sports have well served to cement bonds of close friendship between the armed forces of the two republics. We hope that these pleasant contacts may multiply manifold in the future. It is likewise our most sincere hope and wish that the Mexican and American armies may never face each other as enemies, but should the occasion arise, that they may march side by side in the defense of their common heritage: Liberty and Independence.

URUGUAY—*Revista Militar y Naval.*—April-May, 1931.

"The Cavalry Division in the War of the Future," by Barrien-Balle.

The principal mission of cavalry, the author believes, will be the supplementing of air reconnaissance. It will verify information supplied by the aerial observer, and secure more specific detailed intelligence. The important function of cavalry to gain and maintain contact with the enemy will remain unchanged. The charge by large bodies of cavalry is a thing of the past. In the future, cavalry will act largely as infantry differing essentially in point of mobility. Cavalry divisions and corps will enable higher commanders to move more rapidly to, and throw into action at a critical point an "élite" force. For this reason, the author believes, cavalry combat training should conform more closely to that of infantry. To make for greater effectiveness, the author advocates a cavalry division of three brigades, two cyclist battalions, one motorized battalion, one regiment of light artillery (3 how. btries and 3 gun btries); one heavy artillery regiment (3 heavy how. btries and 2 btries of 10cm. guns). Two of the howitzer batteries and one 10cm. gun battery, the author believes, should be horse-drawn, the remainder motorized. The cavalry should also include one company of motorized engineers, one divisional bridge train, an observation squadron, a bombardment squadron, artillery observation planes, and one tank platoon. The entire personnel of the motorized artillery, in the author's opinion, should be mounted excepting the gunners who should ride on the limber. This would relieve them of the burden of caring for the horses and keep them fresh and in condition for action after prolonged march.

AUSTRIA—*Oesterreichische Wehrzeitung*—October 23, 1931.

Military Information.

According to official figures submitted to the League of Nations, the French military establishment consists of 38,209 officers, and 763,352 men with the colors. The total available manpower is computed at four million men. France has 51,000 machine guns, 4,300 light field guns, 2,400 heavy guns, 3,500 tanks and 4,200 airplanes. The French navy is credited with a total tonnage of 628.603.

The League of Nations credits Poland with a standing army of 17,895 officers and 265,980 men. In addition there are 36,985 men in other militarized services. Other formations with military organization account for 102,946 additional personnel. Poland has 700 airplanes. The Polish government regards this force as inadequate for national defense in view of the political and geographical situation of the country, and it is expected that appropriate representations will be made before the disarmament conference.

Militarwissentschaftliche Mitteilungen—November-December, 1931.

With the current issue this distinguished bimonthly publication concludes the 62d year of its existence. In spite of the economic crisis the editors found the means to enlarge and otherwise improve this excellent journal. The volume for 1931 contains 1216 pages of text, 97 illustrations and 28 separate maps and charts. Its contents are valuable contributions to practically every phase of the art and science of war.

BELGIUM—*Bulletin Belge des Sciences Militaires.*—November, 1931.

"The Kellogg Pact," by C. D.

After a brief sketch of the history of the Kellogg Pact, the author cites M. de la Pradelle's comment to point out that this historic document is after all but a restatement of the views held by Grotius and the canonists before him, that while war is an attribute of sovereignty, to be justifiable it must have a legitimate cause, such as self-defense. The author notes that the pact does not actually prohibit recourse to war except as "an instrument of national policy." Thus, in the case of an international dispute resort to arms to enforce the decision of an arbitral tribunal against a recalcitrant party would not be deemed a "resort to war as an instrument of national policy," but some sort of mandate to enforce the judgment rendered in the case. Under the Kellogg Pact war would still be possible in the following instances: 1. among non-signatories; 2. between a signatory and a non-signatory power; 3. civil war; 4. against a violator of the pact; and 5. in self-defense.

The failure of the pact to define what constitutes "aggression" and "legitimate self-defense," are serious deficiencies. The Anglo-American interpretation of self-defense is regarded as sufficiently elastic to permit almost any kind of war as long at it is camouflaged as a war of defense. The failure to prescribe a system of sanctions is a further source of weakness in the pact. Such is also the failure of the document to prescribe a definite procedure of arbitration.

The Kellogg Pact is essentially an act of good-will. It is but a step in the direction of eventual outlawry of war. It will not be effective, however, until individual states surrender their sovereign right to determine for themselves what constitutes aggression, and what is legitimate national defense. A system of sanctions is necessary to provide for some form of joint action against an aggressor nation. At the very least, signatory nations must pledge themselves not to render any kind of assistance to a nation which had transgressed against the terms of the pact.

GERMANY.—*Wissen und Wehr.*—September, 1931.

"Protection of the Civilian Population Against Aircraft," by Alfred Giesler.

The problem of protecting the civilian population against aircraft in war is receiving increasing attention in all countries. In some, the responsibility for providing proper safeguards is shouldered by the authorities; in others this important matter has been left more or less in the hands of private organizations.

France undertook the initial steps in 1923. Little was, however, accomplished until 1928, when the "Aviation Commission," under the chairmanship of Marshal Lyautey got hold of things. A complete defensive program had been mapped out which is to be completed by January 1, 1935. Parliament readily appropriated the necessary funds which, in 1930, amounted to 400 million francs exclusively for A. A.-defense purposes. Last February Marshal Pétain, by Presidential appointment, became the active head of the organization with the title of "Inspector General of the Territorial A. A.-defense." The defensive plan contemplates the organization of a series of observation belts echeloned at approximately 80 kilometers with listening posts at intervals of 10-13 kilometers. A thoroughly organized network of signal communications will permit the rapid transmission of the alarm. Furthermore, important war industries are to be decentralized. It has been decided to install near the coast, in subterranean bombproofs, oil tanks with a total capacity of two million tons of fuel oil to supply the French navy in an emergency.

Great Britain, thanks to her war experience with air raids, encountered less public and private apathy towards the development of an effective anti-aircraft defense. London is, of course, the nerve center of the United Kingdom; the south of England is second in importance. The capital of the British Empire is surrounded by three concentric observation belts with watch posts at 10-13 kilometer intervals. As in France, a thoroughly organized communications net serves to make the system effective. The south of England is divided into seven defensive zones, each with a separate message center. These are connected by means of special wires with the headquarters of the A. A.-defense installed in a bombproof in one of the suburbs of South London. It is contemplated to use subway tunnels as bombproofs to shelter the civil population in an emergency. In districts remote from the subway system, the construction of special bombproof shelters is planned. Children in all schools receive regular instruction in what they are to do in case of an aerial attack.

Italy organized a special Volunteer Militia of National Security (M. V. S. N.) for the anti-aircraft defense of the country. It is composed of youths of premilitary age. Older men, and those not physically fit for field service may also enlist. The "balilla" (fascist boy scouts) are required to train 9000 "avant-guardists" for service with the A. A.-defense. Responsibility for the preparation and organization of the defensive plan and in all technical matters rests exclusively with the general staff. Observation posts have already been installed along the entire frontier at intervals of 8-10 kilometers. Each group of five or six posts is served by a special message center. For the time being the ordinary communications net serves these outposts. It is planned, however, to install a special A. A. signal system. As in France, important war industries have been transferred from western Lombardy to less exposed districts south of the Apennines.

The smaller countries of Europe are similarly active

in organizing. Austria and Hungary have particularly well organized A. A.-defense systems.

Poland and Russia, and some of the smaller Baltic countries have left the initiative in this important field of national defense to private endeavor. In Poland the "League for Anti-Aircraft and Anti-Gas Defense" receives the patronage of the government. Its appeal for public support is similar to that of the American Red Cross. Its work is still largely in the stage of propaganda. In Russia, the "Ossoaviachim" performs a similar function as the League in Poland. Subsidized by the Soviet government, "Ossoaviachim" has taken complete charge of the development of the air and chemical weapons as well as the defense against them. Instructional exercises and maneuvers are regularly conducted with the active cooperation of the Red Army, Navy, Red Cross, as well as the railroad system and fire departments. Last March, such a maneuver on quite a pretentious scale was conducted in the vicinity of Leningrad.

—*Militar-Wochenblatt*—November 11, 1931.

"Clausewitz," by Major General von Cochenhausen.

November 16 marked the centenary of the passing of one of Germany's outstanding military thinkers, General von Clausewitz. His great knowledge and studious habits, misunderstood by his contemporaries, made Clausewitz an unpopular figure in the Prussian army. Military men of his day regarded all intellectual endeavor out of the ordinary on the part of an army officer as something wholly superfluous, perhaps even deleterious to the army. They looked upon Clausewitz with contempt, and regarded him as a mere theorist. Frequent rebuffs from his superiors caused Clausewitz to leave the Prussian service. He entered the Russian army to serve in the campaign against Napoleon. His lack of knowledge of the Russian language was a serious handicap and prevented him from making his influence felt in the service of the Czar. In 1815 Clausewitz reentered the Prussian army. Fate was against him. He never was given the opportunity to apply his great knowledge and to display his skill on the field of battle. Although he filled the office of corps chief of staff in two armies, unfortunately for him, his corps were invariably relegated to some unimportant minor rôle. His failure to obtain professional recognition wounded him deeply. Retiring from active service, he devoted himself to his studies with even greater assiduity. During the years of peace following the Napoleonic wars Clausewitz produced his literary masterpiece, "On War." A classic in the field of military literature, it has made Clausewitz's name known to soldiers of every land and clime. His fame will endure as long as a knowledge of the art of war is indispensable to the nations of the world.

Great Britain—*The Army Quarterly*—July, 1931.

"Reshuffling the Cards in China," by Brig. Gen. C. D. Bruce.

Reviewing briefly the history of recent civil wars in China, which according to the testimony of the famous Sun Tzu were just as common in the Celestial Kingdom in his own day, some 2000 years ago, as they have been since the dawn of the present century, the author sets forth a number of basic facts which, in his opinion, must be given full consideration in any estimate of the Chinese problem. These are: the immense size of the country, about 3,000,000 square miles; lack of transportation facilities; total railroad trackage about 7000 miles compared with nearly a quarter million miles in the United States of approximately the same territorial extent; the firm and widespread hold of Bolshevism upon the interior of the country; the precarious financial condition of the central government. Although these facts are not the sole obstacles in the way of pacification, they are, in the opinion of many well-informed authorities, well nigh insurmountable.

—*Journal of the Royal United Service Institution*,—May, 1931.

The Royal United Service Institution celebrated the hundredth anniversary of its existence and commemorated that event by issuing the May number of the Journal as a special Centenary number. Representative of all arms and services, the Royal United Service Institution, unique among military organizations, can boast of a record of signal achievements. The centenary number of the Journal is dedicated to a retropect and review of the events of a century in the growth and development of His Britannic Majesty's land, sea and air forces.

Italy.—*Revista Militare Italiana*—June, 1931.

"Infantry Fire," by Lieutenant Colonel Hugo Sprega.

Analyzing the problem of infantry fire, the author lays down three basic principles for the effective employment of infantry fire: 1, delay in opening of fire as long as possible, closing in upon the enemy by rushes without firing; 2, use of infantry fire only when unable to advance otherwise, and then only within the following ranges: Infantry cannon and heavy M. G. 1000 m. or less; light M. G. within 500 m.; rifle-grenades between 20 and 200 m.; hand grenades between 20 and 40 meters. 3. no firing of any kind beyond actual necessity. Superiority of fire must be attained with a maximum of economy of ammunition. The infantry rifle is only complementary to the automatic weapons. In conjunction with these, the rifle may be used at ranges up to 400 m., otherwise not beyond 200 meters.

The mission of infantry is to take and hold the objective of an attack. The fire of supporting artillery is not altogether adequate. At the critical moment the infantryman must depend upon his own resources to drive home the assault. The author examines the different infantry weapons, and the method of training employed in their use. Some features of the training system he regards as obsolete. He advocates that training in rifle-marksmanship be made the principal object of the pre-military training made obligatory upon all youths by a recent statute. It would leave more time for instruction in the use and operation of other infantry weapons during the period of active military service. This training should conform to modern tactical requirements. The author proposes certain proficiency tests for individuals and units and he believes that the efficiency of officers can be determined from the effectiveness of the instruction which they impart to their troops in this field.

Organization Activities

1st Cavalry

Fort D. A. Russell, Texas

(Contributed from outside the garrison)

Those who have been fortunate enough to receive the "Black Hawk Bulletin" will learn with regret that the issue of December 30, 1931, is announced as the last. It has been a very cheerful and snappy publication. True, the fact that the author of some of the puns (e. g. "Knee-o-fight" for "neophyte") has not been shot proves that the frontier is passing—they'll be carrying canes on the streets of Marfa yet.

As stated in its swan song, the "Black Hawk Bulletin" has "never departed from its proclaimed policy of featuring praise and appreciation in preference to sensations and criticisms."

"From its columns the great newspapers of the country * * * were wont to glean rich literary gems from their own pages; that is, they were welcome to do so, and perhaps did, or could have, or would have, had they space available."

3d Cavalry (Less 1st Squadron)

Fort Myer, Virginia

The Honorable Frederick H. Payne, Assistant Secretary of War, was the guest of honor at the first Fort Myer Exhibition Ride of the 1932 season, at 2:50 PM, Friday, January 15th. A week later the Chief of Cavalry was similiarly honored. On the 29th, the ride was given in honor of Major General Paul B. Malone, Commanding 3d Corps Area, and on February 5th for Secretary of the Navy Charles F. Adams.

There are some marked changes from last year's program for the rides. The large riding hall has been equipped with screens and flood lights, so that daytime performance may have all the colorful lighting effects previously confined to night shows of the Society Circus. This alteration also permits the 16th Field Artillery to give its battery drill with the electric light studded gun wheels and harness, heretofore used only at night. Six hundred electric lights are used in this drill, which was a feature of the recent National Horse Show in New York City.

Troop "F" has this year trained its tandem riders to drive two horses in front of their own mounts, and Troop "E" starts its spectacular sheik rides with the daring jump through a circle of fire.

The Society Circus for the benefit of post recreational activities will take place April 1st and 2d, afternoon and evening—four performances.

4th Cavalry

Fort Meade, South Dakota

The outdoor winter sports in this locality were short lived, the continued warm weather and a couple of rainstorms, unusual occurrences for this time of year, have taken away most of the snow on the surrounding hills and made roads in this section of the country difficult for traffic but has slightly improved the water condition here (January 12th).

The Post Exchange at this station recently made arrangements with an Omaha produce company whereby fresh vegetables may be obtained bi-weekly for the members of this command.

M. G. Troop, 10th Cavalry

Fort Myer, Virginia

On January 15th, this troop escorted the Assistant Secretary of War from the Commandant's quarters to the riding hall for the first of the 1932 exhibition rides. The 10th Cavalry carry on lances the yellow guidons bearing a black buffalo commemorating the regiment's long service in the West.

14th Cavalry (Less 1st Squadron)

Fort Des Moines, Iowa

On January 20, 1932 there was held in the post riding hall a series of boxing bouts, and one wrestling bout for the championship of Fort Des Moines. The winners in the different events are as follows:

Light weight: Kranowitch, F, 17th F.A.
Middle weight: Richardson, F, 17th F.A.
Welter weight: Constant, E, 18th F.A.
Heavy weight: Flynn, Hq. Btry., 18th F.A.
Light weight: Thrap, Hq. Btry., 18th F.A.
Welter weight: Lynch, M. G. Tr., 14th Cav.
Light heavy weight: Pickett, E, 18th F.A.
Welter weight: Masterson, Hq. Btry., 18th F.A.

1st Sergeant Benjamin Andrews, Battery E, 18th Field Artillery won the wrestling championship and was presented with a gold medal donated by Captain R. H. Slider, 18th Field Artillery.

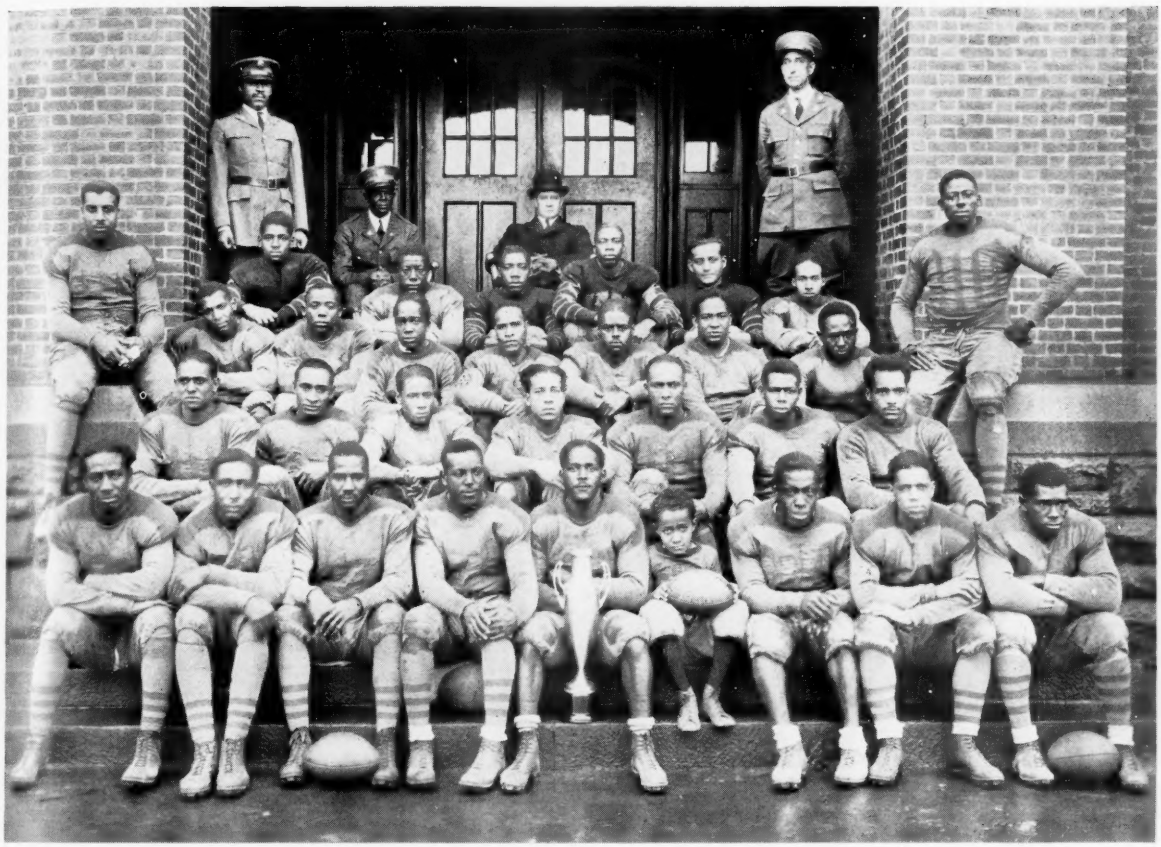
Considerable interest is being shown in the small bore rifle team, which is being picked to represent this post in matches against Fort Snelling, Fort Benning and other posts throughout the Army. The squad is in charge of 1st Lieut. S. C. Page, 14th Cavalry.

There has been organized at Fort Des Moines a mens' riding class for civilian riders from the city of Des Moines. There are about 20 members in this class and it is hoped that sufficient interest will be aroused to be able to start a Hunt Club later in the year.

305th Cavalry

Philadelphia, Pa.

The Regular Wednesday noon and Wednesday evening conferences are proving highly useful in prepar-



Undefeated Football Team of the 2nd Squadron, 10th Cavalry, West Point, N. Y., 1931

ing officers of the regiment for the tactical work expected in camp this coming summer. The tactical problems worked out and given by Reserve officer instructors are very interesting and are considered in no small way responsible for an increasing interest and attendance at these meetings.

A considerable number of new young men have come into the regiment and are very active in both the Extension School work and in active training and are doing much to infuse new life into the regiment's activities.

For the three months the Extension School has been operating, this work has increased more than 50% per month in comparison with the same periods last year. The revision of the courses has added to the interest on the part of all students.

306th Cavalry

Baltimore, Md.

Interest in the inactive training for the present school year is excellent, and more officers are attending the conferences and rides than at any previous time in the history of the 306th Cavalry. A two-sided map maneuver involving offensive action of Cavalry versus Cavalry was begun in December and will be continued for several months. Part of each conference will be devoted to discussions by reserve officers of assigned military subjects.

Due to weather conditions and the lack of a riding hall at Fort Hoyle, Md., instruction in equitation for the Baltimore reserve personnel has been discontinued and will be resumed in the spring.

2nd Squadron and Machine Gun Troop 306th Cavalry

Washington, D. C.

The Secretary of War, Mr. Patrick J. Hurley was the principal guest in whose honor the 2nd Squadron and Machine Gun Troop of the 306th Cavalry entertained at dinner at the Racquet Club on Wednesday evening, December 9, 1931.

Other guests of honor were: Representative Edward Wheeler Goss of Connecticut; Maj. Gen. Guy V. Henry, Chief of Cavalry; Col. Maurice Fitzmaurice Day, Military Attaché of the British Embassy; Col. Harry N. Cootes, 3d Cavalry, Commanding Officer, Ft. Myer, Va.; Maj. Alexander D. Surles, 3d Cavalry, Capt. H. J. Fitzgerald, 3d Cavalry; and Capt. G. I. Smith, 3d Cavalry.

Col. John Philip Hill, Commanding Officer of the 306th Cavalry presided over the evening's festivities.

Fifty-three members of the 62nd Cavalry Division attended the dinner.

The conferences are being conducted according to a new plan. Care is taken to make the instruction and discussion alive and interesting and to "tie in" the conference work with the equitation class held on the following Sunday at Ft. Myer, Va. "Doctrines, Principles and Methods", "Cavalry Armament" and "Leadership" have been the subjects of interesting talks at recent conferences. The attendance record speaks well for the success of this method. Starting with 53 officers and men present at the first conference held in October, attendance has grown to 78 officers and men present at the last conference.

The Sunday equitation class at Ft. Myer, Va. has been divided by the Unit Instructor into 4 groups, each under the instruction of a qualified reserve officer. This provides for a progressive course in equitation and enables all officers and men to secure instruction in accordance with their needs and proficiency.

307th Cavalry

Richmond, Va.

The inactive training period is well under way with a larger percentage of officers enrolled in the Extension School than ever before.

Applications are being received for the detail to the Cavalry School, Fort Riley, Kansas.

Major General Paul B. Malone, gave a most interesting and inspiring talk before the Reserve officers of Richmond and vicinity on December 9th. General Malone was accompanied by Colonel George T. Bowman, Chief of Staff, 62nd Cavalry Division.

Major David H. Blakelock, Cavalry, and Major James R. Mullen, 307th Cavalry, were visitors at Regimental Headquarters during the month.

3d Squad. and M. G. Tr. 307th Cavalry

Norfolk, Virginia

The outstanding event of the Fall was a meeting held at Fort Monroe, Va., on December 10, 1931, for Major General Paul B. Malone. The details of this meeting were arranged by the Unit Instructor of the Squadron, and officers from Norfolk, Portsmouth, Newport News, Hampton and Fort Monroe, Va., were present. This was the first time the Commanding General of the Third Corps Area had visited tidewater Virginia in the interest of the Organized Reserves and the visit was greatly appreciated by all. Over two hundred and fifty were in attendance at the meeting which included Regular Army, National Guard and Reserve Officers, and civilians.

General Malone delivered a most inspiring talk in which he traced the development of the economic and political leadership of the world from early times to the present and coupled this development with the causes of the wars which have occurred thru the ages.

Inactive duty training for the fall months has progressed in a very satisfactory manner. Due to the fact that the personnel of the Squadron is scattered over a large area, conferences and equitation classes have not been well attended, but the enrollment in the Extension Courses of the Cavalry School have exceeded last year's and a great deal of interest has been shown in them. The honor man in the Extension Courses is Pvt. Simon E. Leverett, Hq. Tr. 307th Cavalry, who is working hard to prepare himself for the examination for 2nd Lieutenant Cavalry Reserve.

The schedule for the winter months includes tactical problems involving the Squadron and Regiment in various situations. These problems will be worked out on the map with the various officers solving situations appropriate to their grade. In addition use will be made of the Army Motion Picture Service.

The 307th Cavalry is fortunate in being able to send one troop officer to Fort Riley for the period March 9—June 15, 1932.

308th Cavalry

Pittsburgh, Pa.

Polo enthusiasts are again practicing at the Hunt Armory for a tournament which will probably begin after New Year's. Among the teams who will compete are the 308th Cavalry, 107th Field Artillery, Pittsburgh Polo Club, and the Vangs.

Colonel George T. Bowman, Chief of Staff, 62nd Cavalry Division who is also in charge of Reserve affairs at Headquarters Third Corps Area, Baltimore, Maryland, recently visited Pittsburgh inspecting the 308th Cavalry and 99th Division while here. Keen interest is being shown in the Army Extension School this year. Enrollments continue to increase.

Riding classes at the Hunt Armory on Wednesday evenings from 6:30 PM till 8:00 PM and on Sundays from 9:30 AM to 11:30 AM continue to be well attended. The ladies' class on Tuesday afternoons also are well attended.

During the period of inactive training this year we are devoting considerable attention to Combat orders in preparation for next summer's active duty training.

862nd Field Artillery, Horse

Baltimore, Md.

The inactive status training of the regiment has continued during the past two months with two conferences and two riding classes per month (one riding class during December). The latter have been suspended for the winter and will be resumed in the spring. The interest in these conferences and classes has been well sustained. The reserve officers themselves are conducting most of the conferences.

It has been impracticable to resume pistol practice this fall on account of the fact that the building previously used for this purpose has been deemed unsafe and there is no other available. There is considerable interest in this firing among reserve officers and they are awaiting with some impatience the completion of the Post Office and Federal Court Building which has in its basement an excellent pistol range of dimensions ample for record firing.